



February 2016
Volume 63 Number 1

Technical COMMUNICATION

Journal of the Society for Technical Communication



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Technical COMMUNICATION

Journal of the Society for Technical Communication

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POSTMASTER: Send address changes to *Technical Communication*, 9401 Lee Highway, Suite 300, Fairfax, VA 22031-1803, USA. Printed in the USA.

CHANGES OF ADDRESS AND CORRESPONDENCE: Notification of change of address for both STC members and nonmember subscribers should be sent to the STC office. Nonmember subscription rates (print version): \$400 USD per year, \$420 USD in Canada, (\$440 USD overseas). Individual issues may be purchased from the Society office for \$40 while supplies last.



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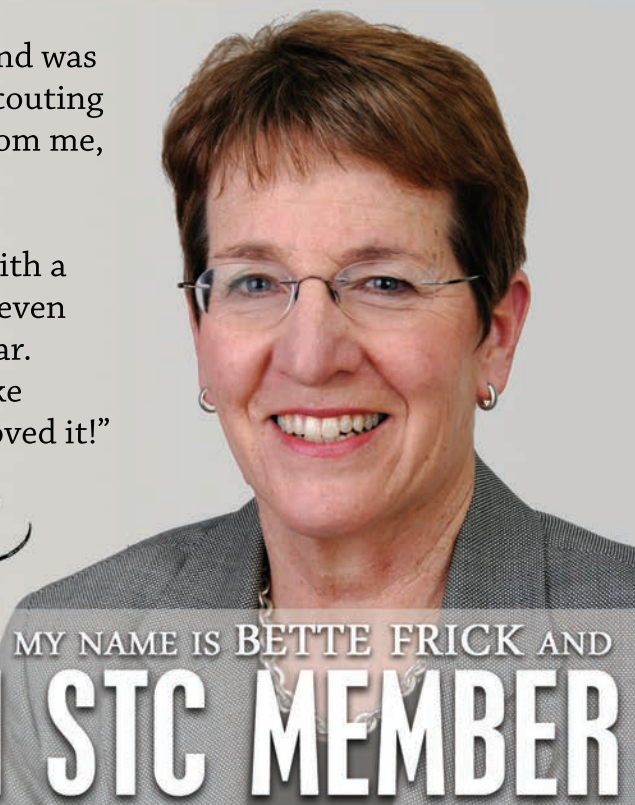
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Bette Frick

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Technical COMMUNICATION

VOLUME 63, NUMBER 1

February 2016

ISSN 0049-3155

FEBRUARY 2016

Journal of the Society for Technical Communication

ARTICLES

CASE HISTORY

- 6** A Decade of XML—and a New Procurement and Lessons Learned

By Mats S. E. Broberg

APPLIED RESEARCH

- 23** Structured Authoring without XML: Evaluating Lightweight DITA for Technical Documentation

By Carlos Evia and Michael Priestley

APPLIED THEORY

- 38** Tailoring Information and Communication Design to Diverse International and Intercultural Audiences: How Culturally Sensitive ICD Improves Online Market Penetration

By Josephine Walwema



DEPARTMENTS

- 1** EDITORIAL
Visions and Directions of Research
By Sam Dragga
- 3** ARTISTS' NOTES
On the Cover and Honorable Mentions
- 53** TOOLS OF THE TRADE
Review of Two Books on Presentation Style
By Caroline Bruno
- 57** BOOK REVIEWS
Jackie Damrau, Editor

ONLINE ONLY TECHCOMM.STC.ORG

- E1** RECENT & RELEVANT
Lyn Gattis, Editor

INSTRUCTIONS FOR AUTHORS

About the Journal

Technical Communication is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

Technical Communication publishes articles in five categories:

- **Applied research** – reports of practically relevant (empirical or analytical) research
- **Applied theory** – original contributions to technical communication theory
- **Case history** – reports on solutions to technical communication problems
- **Tutorial** – instructions on processes or procedures that respond to new developments, insights, laws, standards, requirements, or technologies
- **Bibliography** – reviews of relevant research or bibliographic essays

The purpose of *Technical Communication* is to inform, not impress. Write in a clear, informal style, avoiding jargon and acronyms. Use the first person and active voice. Avoid language that might be considered sexist, and write with the journal's international audience in mind.

Our authority on spelling and usage is *The American Heritage Dictionary*, 4th edition; on punctuation, format, and citation style, the *Publication Manual of the American Psychological Association*, 6th edition.

Manuscript Preparation and Submission

Submitting a manuscript to *Technical Communication* for review and possible publication implies that its submission has been approved by all authors, researchers, and/or organizations involved, that the manuscript (or a substantial portion) has

not been published before, and that the manuscript is not under review elsewhere.

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- Page 3: Up to five keywords and a practitioner's take-away (maximum 100 words) – A bulleted list summarizing the practical implications of the article
- Page 4: Start of the manuscript
- References
- Tables and figures – Start each table or figure on a new page.

Send the manuscript as an attachment to an e-mail message to the editor-in-chief, Sam Dragga (e-mail: tceditor@stc.org).

Review Process

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Sam Dragga, Editor

Visions and Directions of Research

This issue of *Technical Communication* includes the winning illustration in the journal's inaugural cover competition. Impressive, don't you think?

Responding to a call for illustrations that address "The Future of Technical Communication," a wide array of graphic artists, working individually and collaboratively, in academic and industry environments, submitted a total of 35 illustrations. A five-member international jury reviewed the entries and identified the winner and four honorable mentions (see following pages). I think the addition to the journal of this new section allows us to seize the creative opportunity of a cover that changes with each issue as well as to emphasize the capacity of visual communication to inspire critical thinking and influence research. The five illustrations in this issue offer us a splendid initiation and establish a high standard for all following competitions. (The competition for the May 2016 issue closed on January 1, and the competition for August 2016 is in progress.)

In addition, three important articles grace this issue. While the cover offers a vision of the evolving field of technical communication, Mats Broberg chronicles a lively history with a documentation management system in "A Decade of XML—And A New Procurement and Lessons Learned"—a continuation of his 2004 article in this journal, "A Successful Documentation Management

System Using XML" (51.4: 537–546). Broberg's article makes clear that a universal verity applies also to us as technical communicators: knowing where we're going is contingent on realizing—as precisely as possible—where we've been.

The field of technical communication, however, has always been receptive to continuing challenges to existing practice—a trait that keeps us poised and vigorous. In "Structured Authoring without XML: Evaluating Lightweight DITA for Technical Documentation," Carlos Evia and Michael Priestley propose a new direction for the field. Theirs is a feasibility study of using HDITA (i.e., a lightweight version of DITA using HTML5 tags and attributes) to simplify the authoring process for technical documentation. Evia and Priestley test their hypothesis on a class of student writers and report positive findings, both in attitudes about HDITA and in evaluation of the projects created using it.

The field of technical communication is also making progress in the direction of greater dexterity with intercultural communication and greater sensitivity to linguistic, economic, social, and religious diversity. In periods of rising international tensions and anxieties driven by wars, terrorist activity, migrations, famines, droughts, and climate change, technical communicators might exemplify how to cultivate judicious inquiry and compose lucid information on a



foundation of scientific evidence and humanitarian principles. Josephine Walwema's "Tailoring Information and Communication Design to Diverse International and Intercultural Audiences: How Culturally Sensitive ICD Improves Online Market Penetration" guides us in that direction. Examining the Souq.com shopping website (headquartered in the United Arab Emirates), Walwema discovers that the universal principles of Information and Communication Design (ICD) offer a noteworthy but insufficient basis for creating information suited to local users. Knowledge of indigenous traditions and practices also is key to effective technical communication.

The issues addressed in research journals, however, are typically researcher-initiated: that is, motivated by the academic or industry objectives of the researcher. Could we also consider as a potential new direction the opportunity for subscriber-initiated research? What are research questions you would appreciate getting answers to? What are the research projects that you have neither the time nor the resources to address but that you believe are important for the field to investigate? What are the research articles you would appreciate

finding in this journal? And would researchers pick up the projects that subscribers propose?

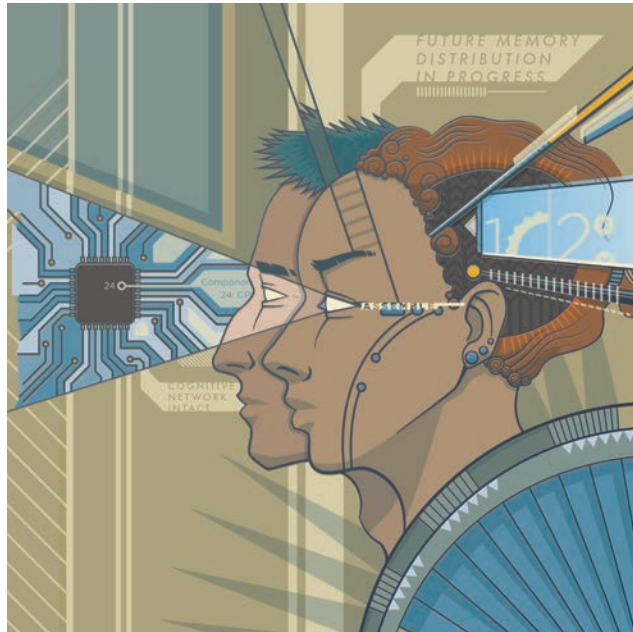
For example, every public university in Texas has been developing a policy to regulate the carrying of concealed weapons on campus. (A new Texas law dictating that public universities must allow this concealed carry of weapons takes effect on August 1 of this year.) This extraordinary and simultaneous effort by multiple institutions—each devising regulations tailored to its unique environment, population, and safety considerations—offers a singular opportunity to examine how policy

is generated. I would genuinely appreciate a thoroughgoing comparative analysis of the university policies that have been written on this subject, especially regarding who participated in the writing of the policies. Were technical communicators engaged in this effort? I think the inclusion or exclusion of technical communicators in the writing of policies with life-or-death implications might be a salient indicator of the visibility (or invisibility) of the field as a vital contributor to the administration of academic institutions. And at least two related questions

deserve answers: 1) How does this inclusion/exclusion correlate with policies that students, faculty, and staff judge easy-to-read and easy-to-understand versus complicated and confusing? and 2) Does inclusion of technical communicators lead to more or less cooperation with policies by students, faculty, and staff of the university? (I would also appreciate studies assessing the ethics and efficacy of concealed-carry practices or the academic impact of allowing weapons in classrooms, but each is likely a topic for a different research journal.)

This is my list of desired research projects. What's yours?

On the Cover



For this cover, we extended the concept of wearables to the future of authoring and digital distribution in technical communication. Technical communication practitioners and scholars have begun to discuss the impact of wearables (Rauch, 2014; Armfield, McGrath, Hill Duin, 2015), and we use this cover to imagine a reality in which wearables are computer chips embedded in the brain meant to interface with the distribution of content. In this cover, technical communicators directly connect with users in developing systems meant to support the creation and curation of people's memories. The cover does this by calling attention to the ethical responsibility of technical communicators as they develop content used by wearables. By imagining memory as distributed by and stored on a computer chip, the image invites conversation about the future of authoring and digital distribution in technical communication.

Armfield, D., McGrath, M., and Hill Duin, A. (July, 2015). *Disrupting Identity through the Materiality of Wearable Technologies*. Paper presented at the International Professional Communication Conference (ProComm), Limerick, Ireland.

Rauch, M. (May, 2014). *Wearable Technology and Google Glass—Why It Matters*. Paper presented at the Society for Technical Communication Summit, Phoenix, AZ.

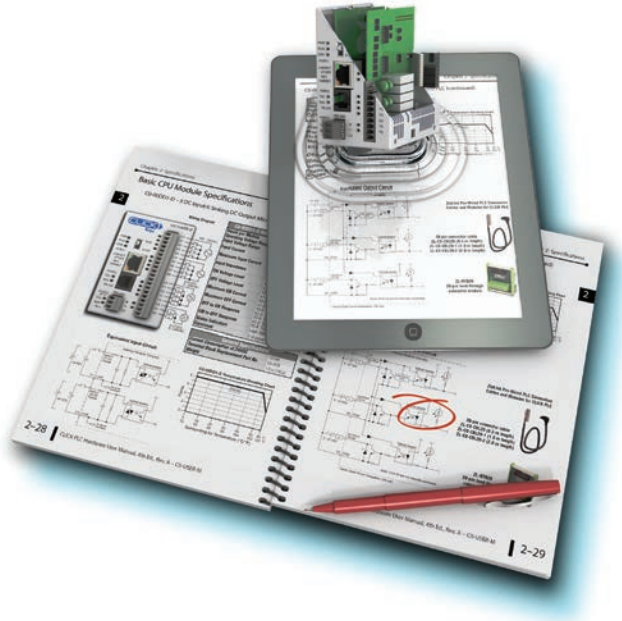
About the Artists

Benjamin Lauren is an Assistant Professor of Experience Architecture (XA) in the Department of Writing, Rhetoric, and American Cultures at Michigan State University, where he teaches professional writing, XA, and rhetoric and writing. He is also a Writing, Information, and Digital Experience (WIDE) Researcher. His research focuses on how people manage creative and collaborative activities in a variety of professional contexts. Other recent projects have addressed mobile application development, workplace environment design, agile and lean project management, and play-based training. He is available at blauren@msu.edu.

Adam Taylor is a third-year MFA candidate at Michigan State University in the Department of Art, Art History, and Design. Previous to attending graduate school, Adam was an in-house print designer and illustrator for a research institution at the University of Utah. Adam's current area of research explores the contexts through which individual memories are recalled and transcribed and how technical systems intervene, interpret, and visualize these memories in community place-making experiences. He is available at taylo993@msu.edu.

Rebecca Tegtmeier is an Assistant Professor in the Department of Art, Art History, and Design at Michigan State University. Through her active research, writing, making, and teaching agenda she investigates the role of a designer and the design process through a variety of forms—from static to dynamic, time-based to print. Working both individually and collaboratively, she approaches design as catalyst in facilitating systems that preserve, protect, and provide—further extending the capabilities and responsibilities of a designer in today's complex world. She is available at tegtmey2@msu.edu.

Honorable Mentions



My illustration, created with Solidworks 3DCAD software, argues that, in the future, a 3D virtual counterpart of every manufactured product will be available to convey technical communication, and it invites practitioners to imagine the potential implications of this technology. Created with an assembly of original 3D models, it depicts a chain of conventional mediation from the printed manual to the digitally mediated iPad e-book file to an imagined data-saturated 3D virtual object*, which, in a fanciful scenario, appears to emerge from the iPad screen.

In the future, 3D virtual objects, laden with content and embedded metadata, will be deployed for rhetorical purposes. I imagine also these 3D virtual counterparts will have the potential to serve as “[q]ueriable illustrations” (Nelson, 1974, p. 19) that operate as an integrated multimodal interface to the flow of underlying technical data available in the “Internet of Things” (Ashton, 2009, para. 1). The elements and features that make up the 3D model might act as an index to associated or embedded content. When a user interrogates the model, the 3D counterpart can be materialized into multiple forms and expressed in a wide variety of genres to serve the needs of the user.

**Permission to map pages from the CLICK PLC Hardware User Manual to the 3DCAD model and to reproduce a model of the CLICK PLC was graciously provided by AutomationDirect.*

Ashton, K. (2009). That ‘Internet of things’ thing, in the real world things matter more than ideas. *RFID Journal*. Retrieved from <http://www.rfidjournal.com/articles/view?4986>

Nelson, T. (1974). *Computer lib/Dream machines*. Chicago, IL: Hugo’s Book Service.

About the Artist

Tom Burns recently completed his PhD in technical communication and rhetoric from Texas Tech University and works as a technical illustrator and information designer for AutomationDirect. The 3DCAD models he creates are used to illustrate product inserts, manuals, online publications, and marketing materials. His research interests include multi-modal illustrations, 3D interactive documentation, the visual grammar of 3-D illustration, and the potential of 3DCAD to expand the domain of technical communication. He is available at tomkburns@gmail.com.



As society adopts new and exciting technologies, it is the role of technical communicators to adapt with these changes. This illustration tries to simply and effectively portray this.

The background was chosen because it is an instantly recognizable depiction of technology. The hand is interacting with the background, pressing on it, implying a direct interaction between the user and the technology. The blue glow that emits from this interaction is repeated in the title. This is done for two reasons: (a) to institute a repetitive element to give a sense of cohesiveness, and (b) to reinforce the idea that the future of technical communications lies in this human-technology interface.

About the Artist

Tyler Duniho is a first-year student in the Masters of Professional Communication program at Clemson University. After graduating, he plans to pursue a career in the field of technical communication. He currently lives in Anderson, South Carolina, with his wife and husky. He is available at tduniho@g.clemson.edu.



This 1940s pulp throwback takes us back to our roots while looking forward. Effective communicators have always tried to communicate using the mediums that their audiences want. Fortunately, this is becoming easier with advances in technology. The robots represent forums and other social media that encourage people to create authentic and up-to-date content. These outlets give communicators the ability to interact with audiences to better understand their needs. As encouraging as this is, audience engagement also presents challenges. A technical communicator could be drowned out when the audience's voice is added to the mix. Like the astronaut in the graphic, a communicator's role should evolve to welcome these voices and lead them to curate content. By working together, technical communicators can continue to create innovative and engaging content.

About the Artist

Jean-Guy Richard has always been interested in graphic communication. After earning a commercial design degree on Prince Edward Island, he immigrated to California as a graphic artist/illustrator, then worked as an illustrator/multimedia designer at a Midwestern major computer company. He is currently a graphic artist/illustrator at D2 in South Dakota. He is available at JeanGuy.Richard@d2worldwide.com.

The artist's note was composed by Mikara Bonham, a new member of STC and a writer at D2.



Lao Tzu wrote: "Those who have knowledge, don't predict. Those who predict, don't have knowledge." Predicting the future of technical communication, in particular, is no less problematic.

The clearest prediction seemingly comes from looking at trends in how people have already been viewing information. In 2014, Internet usage on mobile devices already exceeded usage on desktop devices. In the future, it seems clear that mobile devices will dominate the world of technical communication, while delivery via paper and desktop computers will shrink. (Hence, the image of the cell phone looking down toward the earth.)

Beyond that obvious prediction, however, details about the development and deployment of mobile information as well as other directions in technical communication seem much less clear. (Hence, the image of the question marks on the sign post inside the cell phone's screen.)

Nevertheless, although specifics are hard to predict, humanity will always need information—whether in the form of text, illustrations, and/or video—presented in a clear, concise, complete, and compelling way. (Hence, the starburst.)

The cover illustration is a heavily edited collage of multiple images—of the earth, moon, space, starburst, hand with phone, and a signpost.

About the Artist

Mark Stucky has been a technical communicator and an STC member for nearly 25 years. He has documented diverse products, including satellite communications, power amplifiers, custom truck bodies, and building automation controls. He has two master's degrees and currently works for KMC Controls. See more on <https://www.linkedin.com/in/markstucky>. He is available at markdstucky@gmail.com.

A Decade of XML—and a New Procurement and Lessons Learned

By Mats S. E. Broberg, FLIR Systems

Abstract

Purpose: To describe the specification, procurement, and implementation of a new, XML-based technical documentation system for a large, multinational company.

Method: This study uses a descriptive analytical method, based on available project data, interviews, and fault analyses.

Results: The results of this research outline the technical, strategic, and organizational aspects that are associated with the procurement of a critical multi-site system where a high level of availability is necessary.

Conclusion: Organizational stakeholders were identified as critical for success; new authors' previous experiences lacked predictive value; existing documentation cultures at one specific site were not studied closely enough; and a deeper analysis of risk management with regard to the choice of DTD should have been made.

Keywords: XML, content management system, procurement, implementation, migration.

Practitioner's take-away:

- A futurological analysis is required to identify critical system features and functions.
- Considerable resources need to be spent on the development of an extensive request for quotation (RFQ). This step is crucial and will facilitate further analysis of tenders.
- A procurement can last several years, during which time some of the vendors may be restructured, which leads to them not being able to deliver.
- Data to be migrated can be disparate and can involve entirely different technical problems, risks, and solutions.

This case history describes a large multinational manufacturing company's second procurement of an XML-based documentation management system, their analysis of business needs, the development of the request for quotation (RFQ), and the solution that was eventually selected. Information is then provided about the migration of new and existing sites, and lessons learned from the procurement process and implementation of the system.

Background

In 2002, I procured an XML-based documentation system from the company Excosoftware in order to ensure that the greatly expanded and highly dynamic product portfolio, which was then being established at the Swedish division of FLIR Systems (NASDAQ: FLIR), could be managed in a professional manner for the foreseeable future.

I presented that procurement, together with a description of the chosen system and a review of a number of technical aspects and solutions, in my article "A Successful Documentation Management System Using XML" (2004).

During the spring of 2012—10 years after that procurement—a new XML system was launched for the same division of the company, and that XML system is the subject of this article.

Company Development Since 2002

FLIR's revenue in 2002 was 261 million USD. Since then, the company has expanded greatly, both through a large number of acquisitions of other companies in related industries (13 acquisitions since 2007) and through the strategic identification of new applications, customer groups, and industrial segments. For 2014, the revenue was 1.5 billion USD.

Within the company, there is also a culture of continuous improvement and continual study of how costs can be cut, processes improved, and lead times reduced—a culture that undoubtedly has been highly significant in the context of revenue.

The Need for a New Documentation System

The Excosoftware documentation system was in operation from December 2002 until the summer of 2012, and

its strategic significance for FLIR's ability to be able to manage the steadily increasing volume of technical information cannot be overrated. Around 700 manuals were maintained actively in the system in 2012. Excosoftware offered a very mature product and excellent technical support during phases that were often time-critical, and the company is still one of the most significant players when it comes to XML systems within the Nordic market.

In early 2007, I began a futurological study with the aim of identifying how technical information in a broader sense would need to be managed within the company in 5 years' time and which system requirements might be needed to cater for this. The great success of XML within the thermographic division had led other divisions and business units within the company to understand the advantages of this technology. In this context, it was, therefore, also relevant to take into account how new authors and authors unaccustomed to the technical aspects of XML could be offered a more efficient means of managing their documentation without being intimidated by the radically different way of working that XML entails compared with, e.g., Microsoft's Office package, Adobe InDesign, or Adobe FrameMaker. It was also important to find a good business model for a global project.

I identified, during this study, a number of user and functional aspects that I considered crucial both to attracting users who were new to and inexperienced in an XML-based workflow and also offering technically driven authors a very high level of advanced functionality and specialization. Added to this were a number of aspects that were not directly user-related but were considered critically important to the whole process flow, relative to the technical documentation.

During the spring of 2007, this study resulted in the development of a formal Request for Quotation.

Development of the Request for Quotation

The RFQ that was drawn up ahead of the new procurement comprised 489 specific requirements or questions, most of which were of a functional nature. These were partly based on my previous professional experience (in translation, graphic design, printing, and technical documentation), partly on my, by now, 5 years' experience of our existing documentation system, and partly on refining what I considered would be mission-critical demands on the company in 5 years.

A Decade of XML

The functional demands were broken down into the following RFQ sections:

- Content management system (CMS)
- Transformations
- Special formatting constructs
- Notes
- Authoring environment
- DTD/Schema
- Translation management
- Indexing
- Page management
- Reviewing
- Terminology management
- Conditional formatting
- Compliance to 21 CFR Part 11

The following is a closer description of each section with a number of representative examples of questions and requirements from the RFQ.

Content management system

This section of the RFQ described a number of functional requirements and questions concerning the CMS system solution.

Examples from the RFQ:

74. *Is the database storing the XML content a Native XML Database (NXD)?*

92. *Does the system provide search functions to carry out searches on a large batch of files in the CMS repository, using the following methods?*

- *Exact match search*
- *Phrase search*
- *Searches using regular expressions*
- *Searches using Boolean logic*
- *Proximity searches*

Specify which search methods are supported.

95. *Describe the metadata elements for components in the CMS system.*

102. *Does the system provide any means of automatically gathering all XML files in a specified publication and save*

this file collection to a location outside the CMS? If so, describe these methods.

106. *When file conflicts appear when merging a branch into a main development line, can the user choose whether the branch files or the main development files shall take precedence when resolving the conflicts?*

Transformations

This section was divided into output-independent transformations, transformations to PDF, transformations to HTML, transformations to HTMLHelp, and other transformations.

Examples from the RFQ:

120. *Can the system be set up in such a manner that phrases with a specific attribute are still hyphenated even though a hyphenation algorithm does not find a proper hyphenation point?*

176. *In Adobe PDF, can cross references be evaluated against contextual criteria and the wording of the cross reference changed in a second-pass transformation?*

179. *Does the system support that a user specifies an external ICC profile for an Adobe PDF publication that will be embedded in the final Adobe PDF output?*

193. *Does the system provide functionality to process existing images to a color space (i.e., RGB) suitable for HTML output?*

201. *Can the system generate MIF (Maker Interchange Format)?*

Special formatting constructs

The constructs in this section addressed a number of issues that have to do with the composition and technical aspects of the graphic production chain.

Examples from the RFQ:

207. *Does the breaking of paragraphs into lines use a line-based line-breaking algorithm (as in most formatters) or a paragraph-based line-breaking algorithm (as, e.g., in TeX/LaTeX and Adobe InDesign)?*

233. *If a user specifies paper thickness, can the system, at a user's choice, output the cover as a separate file where*

the spine width is automatically calculated by the system, according to a given paper thickness and number of pages?

240. *Does the system support that a user enters a specific attribute for an image and the system then gathers and outputs such images at one or more page-specific places in the publication?*

246. *Can the system automatically prevent short closing lines in a paragraph, if a user defines what constitutes a short line and what measures shall be taken?*

Notes

This section covered the system's ability to manage different types of footnotes and margin notes. Most systems support an elementary composition of notes but, as within FLIR there are regularly a number of scientific publications that need to be managed in a professional manner, we wanted to set demands for a more advanced management of footnotes and margin notes.

Examples from the RFQ:

274. *Does the system support independently numbered, multiple series of footnotes?*

279. *Can a user define the maximum ratio of a page that the footnote area is allowed to use?*

280. *Can a user control the footnote separator type, style, and spacing?*

Authoring environment

This section in the RFQ covered the editing tool—its technical functions and capacity, interaction with the user, etc.

Examples from the RFQ:

286. *Can text from, e.g., Microsoft Excel or Microsoft Word be pasted into the editor, retaining the correct character values?*

288. *Does the editor support change tracking (i.e., redlining)?*

311. *Does the authoring environment support any ASD-STE100 Simplified Technical English language and*

grammar checkers? If so, specify which STE checker is supported.

313. *Does the editor support any scripting language that a user can use to carry out complex tasks? If so, specify the scripting language and provide an URL to a website presenting the language, or a whitepaper.*

319. *Provided that the system supports conditional formatting, can the conditions be visually displayed in the editor?*

DTD/Schema

This section asked a number of questions concerning which DTD or which Schema was being offered, their degree of specialization, and any technical limitations.

Examples from the RFQ:

323. *If the DTD or Schema that the system uses is a customized variant of a publicly available DTD or Schema, provide documentation on the differences.*

324. *Describe the DTD's/Schema's technical limitations with regard to supporting various types of document architectures. By this we refer to a DTD's/Schema's ability to not only support a traditional "book" paradigm (which typically includes cover, title page, TOC, main text, index, etc.), but to also support other types of paradigm, such as leaflets, brochures, letters, quick reference guides, full-screen presentations, etc.*

Translation management

With increased demands in terms of global market penetration, when the RFQ was written, a great deal of focus was concentrated on a number of system requirements and dependence upon localization. These aspects were also referred to in this section of the RFQ.

Examples from the RFQ:

329. *At time of importing of a translation project, can the Translation Management System (TMS) warn for private use Unicode codepoints, erroneously entered by a translator?*

332. *At time of importing a translation project, can the TMS warn if the XML structure (i.e., the XML tree) differs from the exported XML structure?*

A Decade of XML

335. *Can a user implement non-linguistic changes that were made in a source language into target languages without the need to send content to a translation agency?*

341. *At time of generation of a new translation project, does the TMS scan any phrase or paragraph in phrase libraries in the CMS in order to find already translated content?*

Indexing

An index is an important tool for a reader to find relevant information in a publication, and a number of technical aspects around how an index would be supported in the workflow were covered in this section of the RFQ.

Examples from the RFQ:

344. *Can the TMS gather index entries and output these entries in a more convenient form for the translator, and then, upon import of the translation project, reposition them to their correct places?*

353. *Does the system support multiple indexes, e.g., one index of personal names, one general index and one index with geographical locations?*

362. *Would the sorting of indices be compliant to Unicode Collation Algorithm/Default Unicode Collation Element Table (DUCET)?*

363. *If so, can the system enhance the sorting quality of Unicode Collation Algorithm/Default Unicode Collation Element Table (DUCET) with publicly available tailorings, needed to get the correct national sort order compared to the Unicode default sorting order?*

Page management

This section covered a few aspects of loose-leaf publishing and change pages publishing—types of publication that are not unusual in the defense industry, to which several of FLIR's product segments are directed.

Reviewing

A well-functioning user interface and efficient workflow for the internal review of publications before the official release is central within the area of documentation, and this was emphasized in the RFQ.

Examples from the RFQ:

370. *Can a user responsible for creating a review task set a due date when all reviews should be finished?*

378. *Does the system support real-time chatting to resolve disputes among reviewers?*

380. *Can a reviewer attach files to his or her comments, such as a screenshot or a Microsoft Word file?*

Terminology management

This section covered a number of issues concerning whether the system had an integrated terminology-management function. One common technical solution is to manage this function via a plug-in (e.g., Acrolinx) in the editing tool. However, one of the suppliers had a fully integrated terminology-management tool.

Conditional formatting

Conditional formatting is a very powerful method for generating a large number of variants of manuals based on a small number of supermanuals, where items (e.g., product name, images, and sections) differ depending on a number of formatting conditions that were set up initially. As conditional formatting had been used extensively in the existing documentation system, this element was considered to be of interest in a future procurement.

Examples from the RFQ:

398. *Can conditions be combined using Boolean logic?*

400. *Can a condition be combined with an xml:lang attribute?*

Compliance with 21 CFR Part 11

The U.S. Food and Drug Administration's document 21 CFR Part 11 defines regulations on electronic archives and electronic signatures, and questions regarding system support for these were asked in this section.

403. *Does the system technically comply to FDA 21 CFR Part 11?*

404. *If the system does not technically comply to FDA 21 CFR Part 11, specify if the system has technical limitations with regard to implementing the necessary features to meet or exceed the requirements stated in FDA 21 CFR Part 11.*

Procurement

In May 2007, the RFQ was sent to six suppliers of XML-based documentation systems. Of these, five were European suppliers and one was in the USA. Five suppliers replied with a formal tender and a carefully completed requirement form/questionnaire, together with other documentation (project plans, development models, agreement proposals, etc.). One supplier chose not to take part in the procurement after receiving the RFQ, as the quotation officer felt it could not respond to such an extensive RFQ without invoicing FLIR for internal time.

All the tenders received underwent a thorough technical and business evaluation by me and other interested parties within FLIR during the autumn of 2007. I had not expected any suppliers to be able to offer a system that complied fully with the technical requirements laid out in the RFQ. There was a large spread among them with regard to how well they met the set requirements and in which fields they were technically stronger or weaker.

In order to present the evaluation to personnel higher up in FLIR, an executive summary was drawn up in which the technical analysis of the tendered systems was summarized in the following seven main areas:

- Authoring environment
- Content management system
- Formatting engine and maintenance of style sheets
- Translation management
- Terminology management
- Review workflow
- International collaboration

In the executive summary, I recommended that the Swedish management go ahead with one of the suppliers to a proof-of-concept phase. At this stage, the procurement was delayed by over one year due to internal workload and intense product-introduction phases within FLIR. During this time, the selected supplier was acquired by another company, and the supplier finally acknowledged that it would not be able to complete the implementation in the foreseeable future. Therefore, I decided to go ahead with the supplier that had been rated as number two in the technical evaluation—the company Simonsoft.

Simonsoft (<http://www.simonsoft.se>), based in Gothenburg, has 10 employees and is a wholly owned

subsidiary of the PDS Vision Group (<http://www.pdsvision.com>)—a supplier of IT products and services in the PLM field, principally from the American company PTC (<http://www.ptc.com>). The company was founded by a number of people from PTC who, in connection with the acquisition of Arbortext in 2005, broke away from PTC. Since then, Simonsoft has been the sole distributor of these products in the Northern Europe market. Today, the company is also represented in England and Germany, with retailers in Canada. Simonsoft also offers varying degrees of integrated solutions based on products from PTC, and this was a solution included in the tender they offered FLIR in 2007.

Description of the System Solution from Simonsoft

The system from Simonsoft is based on a number of well-known, tried-and-tested modules and software that are integrated and packaged into a comprehensive solution to create and maintain technical information throughout its life cycle.

The system is based on the following modules and software:

- The editing tool Arbortext Editor from PTC (see Figure 1). This editing tool for SGML and XML was introduced in 1991 under the name Adept Editor by Arbortext in Ann Arbor, Michigan, USA, and is one of the most widely used editing tools. Arbortext was acquired by PTC in 2005.
- The Simonsoft CMS version-management system, based on Subversion from Apache Software Foundation. Subversion, an open-source program for version management, was released in 2000 and has several hundred thousand installations the world over. Simonsoft CMS also contains a Web interface for Subversion and has been designed to cater to a fully Web-based management and overview of all files in the version-management system.
- The Advanced Print Publisher formatting engine from PTC. This formatting engine, one of the most advanced engines on the market, was previously known as Advent 3B2 and was developed originally by Advent Publishing Systems in England. The company was acquired by Arbortext in 2004.
- Arbortext Styler from PTC. Arbortext Styler is an advanced tool for developing and maintaining

A Decade of XML

style sheets for Formatting Output Specification Instance (FOSI), Extensible Stylesheet Language Transformations (XSLT), and the proprietary style-sheet language for the Advanced Print Publisher formatting engine.

Simonsoft's solution is fully cloud-based and can be accessed over an <https://> connection from any geographic location and computer, provided the computer has the necessary security certificates installed.

From a user perspective, it is, above all, the Arbortext Editor tool and Simonsoft CMS that the user is in contact with and I therefore limit my description to these.

The Arbortext Editor tool

As mentioned previously, Arbortext Editor is one of the most widely used editing tools for SGML and XML and has a long history. It has a user interface that visually resembles a word processor, which is an advantage when training new authors, as most of them have experience with a Microsoft Word workflow. This editing tool can be easily integrated with external databases and has robust support when it comes to the importing of engineering data from, e.g., Microsoft Excel or Word. A detailed description of the editing tool is beyond the scope of this article, and I therefore refer interested readers to the documentation available on the PTC website (<http://www.ptc.com>).

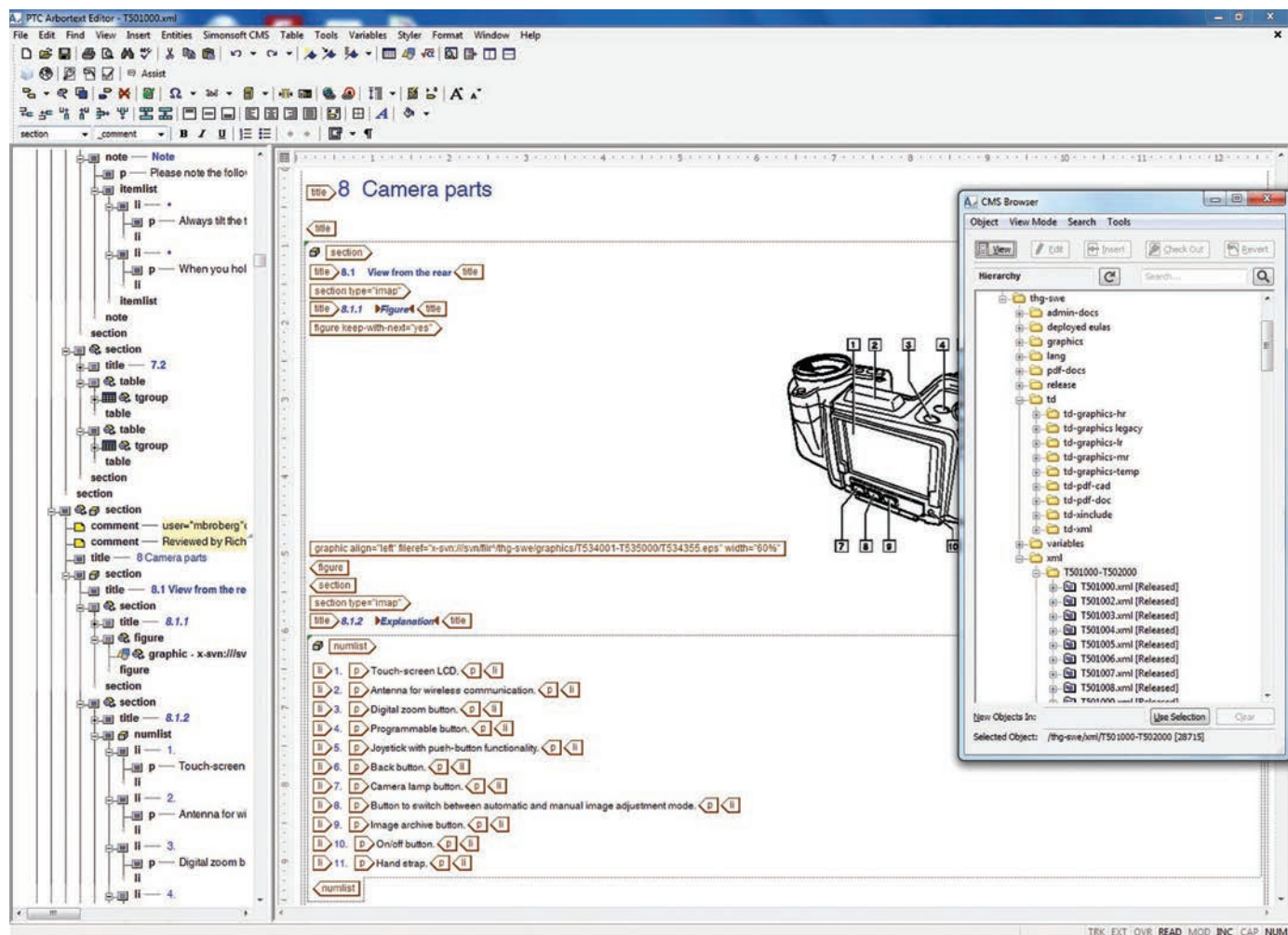


Figure 1. Arbortext Editor Showing a Section from a FLIR T4xx Series Manual and the CMS Browser Tool

Instead, I would like to look in detail at CMS Assist—an adaptation of Arbortext Editor, developed by Simonsoft, which forms part of the system solution. It offers excellent support to authors in terms of linguistic consistency and also greatly minimizes translation costs.

The CMS Assist tool is fully integrated in Arbortext Editor. When an author makes a brief pause in writing, the tool makes a rapid look-up in the database for linguistically similar segments in previously released documents and possible existing translations. These segments are displayed in a split-screen view at the bottom of Arbortext Editor. When the author sees a suitable segment to reuse, he or she can click on it to see whether it has been translated previously.

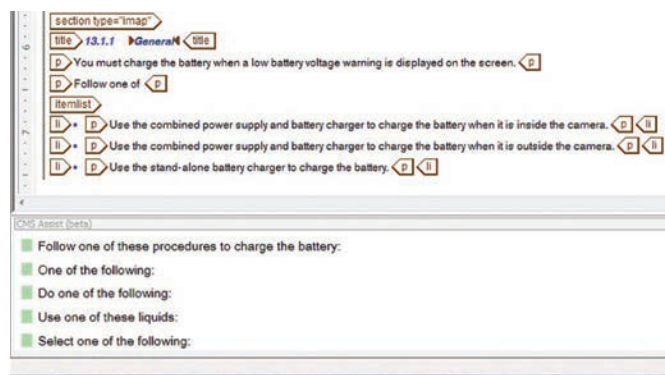


Figure 2. Segments Presented for the Author in a Split Window When He or She has Stopped Writing in the Last Paragraph before the Itemized List

If the author decides to use the segment, he or she can double-click on the segment in order to reuse it in the current context. The segment will then be inserted into the text and set with a unique checksum attribute.

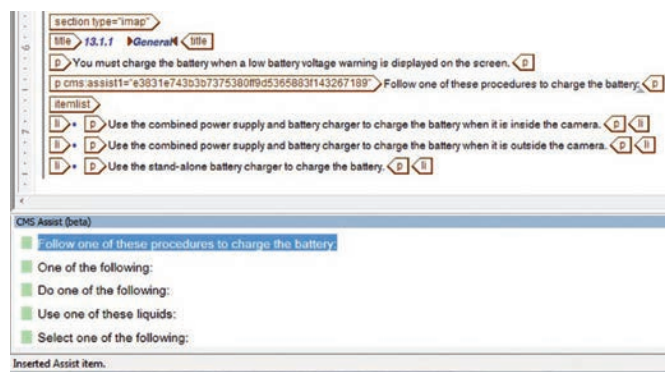


Figure 3. The Last Paragraph before the Itemized List Replaced by the Selected Segment

This approach has three compelling advantages:

- It helps the author establish linguistic and terminological stringency in his or her writing, which has a positive effect on the customer's experience and understanding of the text.
- It provides system support for the author in order to avoid a plethora of linguistic variants of significantly identical expressions and segments and thereby minimizes so-called "fuzzy matches" in the translation stage, which always lead to additional expense, depending on the segment's percentage of hits in the translation memory.
- The author can see directly if one or another segment suitable to the context has already been translated and is thereby given the opportunity to select a segment that has already been translated, thus avoiding additional translation costs.

Similar solutions are already available for Arbortext Editor in the form of plug-ins from other suppliers but at a completely different cost and with more complex system and version dependencies. These solutions often require that separate servers holding sentence databases are being commissioned and maintained. Some suppliers certainly offer additional functions in their tools, e.g., grammar checks, linguistic style, and stricter terminology management, but, in my experience, grammar checks and linguistic style are relatively easy to control procedurally in an existing documentation process. My analysis of how CMS Assist works and how it can provide support for authors in their daily work indicates that this is a very cost-efficient solution compared to other offers on the market.

Simonsoft CMS

As mentioned above, Simonsoft CMS contains a Web interface for Subversion. This Web interface allows excellent control of all objects, configurations, and dependencies in the version-management system and also offers the user a large number of tools for managing and configuring files.

The following operations can be performed in Simonsoft CMS:

- Open and edit XML files in Arbortext Editor.
- Preview and publish XML files.
- Release XML files.

A Decade of XML

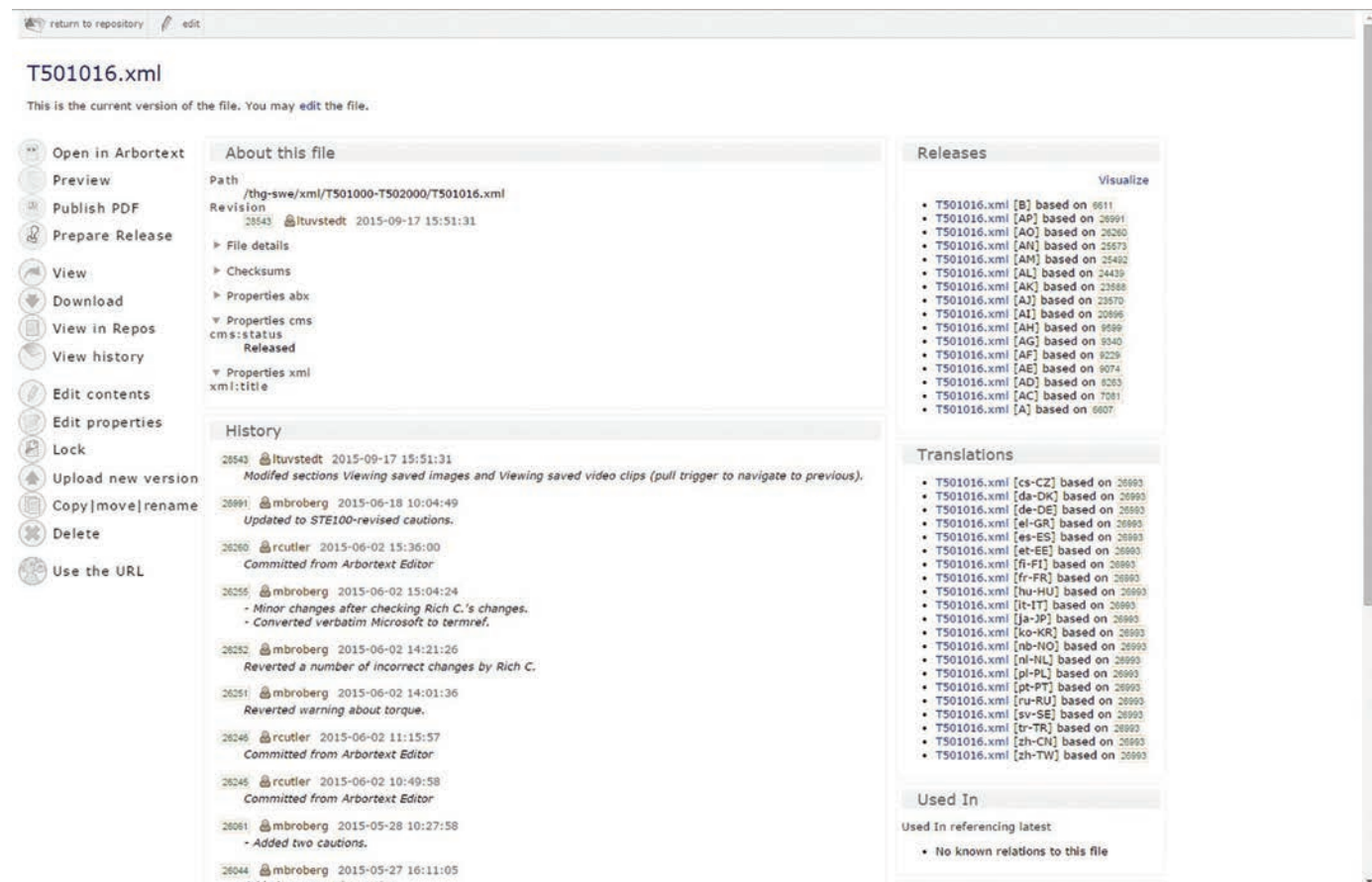


Figure 4. A Simonsoft CMS View of an XML File (a FLIR Kxx series manual) Showing Buttons for Various Operations (left), Version History (middle), and Associated Releases and Translations (right)

- Create translation projects and pretranslate an XML file using the system's internal translation memory before handing over to a translation agency.
- Show XML files in code view.
- Download or upload new file versions.
- Edit file properties.
- Copy, move, or rename files.
- Delete a file.
- View the version history for each file and open any historic version.
- See what releases there have been of an XML file.
- See what translations have been made based on a certain XML file.
- See in what other XML files a given file is used (where used).
- See what other files are included in a given XML file (dependencies).
- Visualize relationships between XML files, their releases, and translations.

As mentioned above, Simonsoft CMS offers the ability to automatically pretranslate XML files from previously existing translations and this is one of the most powerful functions in the system. The function builds on the assumption that the linguistic risk of automatically translating block elements from the <section> element down to and including <p> and <row> elements is sufficiently low to make such a pretranslation advantageous from a business perspective. From a technical viewpoint, 100% matches of the contents against the translation memory are moved from the translation provider to the documentation system, which has several advantages:

- Authors are given full control over which translations are used, which, depending on what the technical flow looks like at the translation providers, is not always the case when this matching is done by them.

- Corrections of existing translations can be done easily in the system and the latest corrected instance of the paragraph or section is used automatically during subsequent pretranslations.
- Some translation providers charge for 100% matches—this charge will disappear completely with this function.

The lower limit in the standard system settings for pretranslation is set to <p> and <row> elements, but this can be reconfigured if a break point at other elements is considered to be better. From a linguistic perspective, there is a minimal but actual risk that a pretranslated block element is not suitable contextually in relation to the previous or next non-pretranslated block element. For this reason, all pretranslated translation projects are generated as complete but bilingual XML documents, where the translator is able to see the pretranslated text as well as the text for translation. Attributes are set in different ways for these and the blocks are therefore easy to manage at the translation stage.

Within FLIR, the pretranslation function has been a great success, and most projects sent to translation providers today are already pretranslated by up to 80–90%.

Migration Projects

As mentioned earlier, the success of XML within the thermographic division has led to other divisions and business units becoming interested in migrating their documentation to this new workflow. The migration project therefore also included two further units in addition to some recent and planned migrations. The project can be divided into the following four phases:

- Migration of the Infrared Training Center's (ITC's) documentation
- Migration of Governmental Systems Sweden's documentation
- Migration of the Instrument division's existing XML documentation
- Recent and planned migration projects

Migration of ITC's documentation

The ITC is a global infrared training organization specializing in the certification of thermographers according to international standards. It is a business unit

of the FLIR Systems' Sales organization, with the primary objective to grow the market through knowledge.

At the time of migration, ITC had approximately 250 archived documents, with approximately 50% considered "living." Each archived object existed in a number of languages in up to 25 versions. The documents were primarily Microsoft Word and PowerPoint files. ITC documents were created by a core team of 3–6 people in different locations and countries. The documents were reviewed by approximately 10 people located in Sweden and Boston, then tested globally during a beta period, and finally released for use by FLIR staff and licensed partners, numbering 30+ entities.

It soon became clear that the use of PowerPoint was firmly anchored within the ITC organization. The lecturers and authors who drew up training materials for courses were also very well versed in the use of PowerPoint and all of its functions. Our analysis, done together with Simonsoft, was that the only way to globally anchor a new workflow was to offer a similar type of publication to PowerPoint—but with the whole force of the XML-based infrastructure under the surface. However, from a technical perspective, the goal could, naturally, never be to offer the much greater number of features that PowerPoint has. The need for the authors to adapt to a new workflow and a significantly smaller range of features could not be circumvented. However, from a business perspective, we saw that this could be anchored, given the undoubted benefits that an XML-based workflow has and the framework decisions that were taken high up in ITC's global organization.

In order to satisfy the need for a slide-based publication concept, it was necessary for Simonsoft to make certain adaptations to its DTD, as, at the time of the migration, this did not contain a slide element. Simonsoft's DTD—called *techdoc.dtd*—is a simplistic DTD for covering most of the needs of technical documentation and has only 32 block elements, four reference elements, and 11 inline elements. As with most of the other DTDs for technical documentation, it is based on the assumption that information is to be allowed to flow freely over to the next page if there is not enough room on one page. However, a slide-based publication concept is page-centric and based on the opposite assumption—that all significant information around a point in the lecturer's presentation fits onto one page.

A Decade of XML

PowerPoint also has a view called *notes pages*. These hold notes that the lecturer has made in order to assist him or her during the lecture (e.g., support words, author's comments, or questions for the students). These notes are not visible during the presentation and can only be seen by the lecturer in a split-screen view on his or her computer. A similar function was considered to be an important component for ITC.

For these reasons, Simonsoft added two elements in order to handle ITC's course material—`<slide>` and `<notes>`—and developed two different style sheets that complied with ITC's brand identity:

- Standard—a traditional A4 publication in portrait format used for more extensive course material for certified customers.

- Slides—a page-centric presentation similar to PowerPoint with the possibility, through profiling, of formatting notes pages on separate pages.

ITC's organization was affected by restructuring measures during the spring of 2010, which led to the loss of important stakeholders as well as the organization-wide drive to achieve the documentation migration. This is an absolute condition if such a project is to be implemented successfully. As a consequence, the migration was reduced such that only the course material of the Swedish ITC site was covered. Despite the significantly smaller scope, ITC's technical author in Sweden has experienced a significant increase in efficiency compared with the management of the corresponding documentation in the old PowerPoint

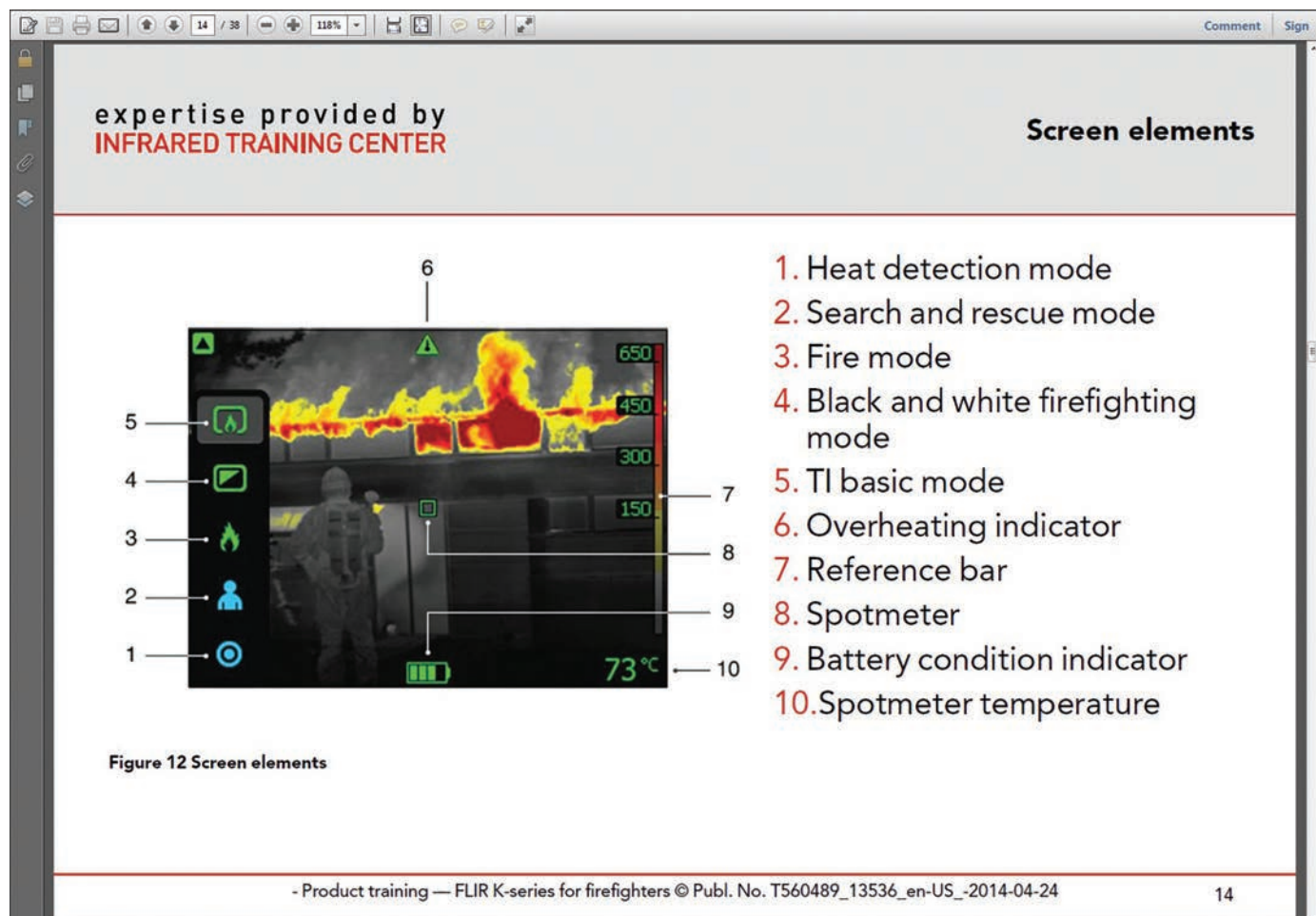


Figure 5. A View of the Slides Style Sheet for PDF

flow—not least in the traceability, modularization of documentation, and the translation process. The author has also been a driving force in the efforts to embrace new standards and has, together with an external supplier and others, developed online courses according to Sharable Content Object Reference Model (SCORM), based on the course material that is maintained in the documentation system. SCORM is a collection of technical standards for Web-based e-learning, originally initiated by the U.S. Department of Defense.

Migration of Governmental Systems Sweden's documentation

Governmental Systems Sweden (here called GSS) is a business unit of FLIR Systems, which develops and manufactures land-based systems and sensors for government agencies and military customers. Their principal product segments are the following:

- Fixed surveillance systems for border protection, coastal surveillance, vessel traffic monitoring, and airport security.
- Vehicle vision systems, i.e., technologies for situational awareness and driver's vision enhancement.
- Thermal weapon sights for anti-armor and anti-aircraft missile systems.

The existing workflow for GSS documentation involved a technical author writing manuals in Microsoft Word. Once these manuals had undergone internal review and approval, the Word files were sent to an external company that imported the text into Adobe InDesign, applied the correct character and paragraph formats, and created high-resolution PDFs that were returned to GSS for archiving, distribution, and forwarding to external printing plants. This workflow was not only inefficient in time but was also costly. Responsible persons within GSS were, therefore, highly motivated when it came to a new and more efficient workflow.

An initial migration took place during 2011 and included around 40 chapters and 250 images, which represented only a small fraction of the GSS documentation. The GSS technical author thereafter carried on working with further migration of existing documentation and built and configured publications in the system.

Today, the GSS technical author maintains around 70 technical publications in the system and has experienced, as was the case with the ITC author, greatly increased productivity and cost efficiency compared with managing the documentation in the previous workflow. In this context, it must be said that GSS does not, as a rule, translate any documentation and does not therefore benefit from the system's streamlining of the translation process.

Migration of the Instrument division's existing XML documentation

The most complex migration in the project was undoubtedly the migration of the XML-based documentation from the existing legacy system to the new system solution from Simonsoft. Our awareness of this complexity meant that we deliberately chose to undertake this process last in the project—two years after the ITC migration and one year after the GSS migration. A further aspect that hindered the migration was the fact that the legacy system was a live production environment until all the XML files and images had been imported into the Simonsoft solution—after which the new system had to function immediately in a production-verified state with an uptime of virtually 100%. It was not possible to maintain the technical publications in parallel in the two systems, and, in the very intense introduction phase in which the migration was to take place, there was no chance of pausing the documentation work in the legacy system and restarting it some weeks later in the new system solution.

The migration project included a number of known and necessary technical steps but also a number of steps that depended on different business and technical aspects that FLIR was obligated to decide upon.

The known and necessary steps were the following:

- Refactoring of existing XML files from the legacy system's DTD `flex.dtd` to Simonsoft's DTD `techdoc.dtd`. We did not expect any directly technical problems because `flex.dtd`, just like `techdoc.dtd`, is a simple DTD with about the same number of elements.
- Replacement of internal, external, absolute, and relative paths to XML and image files.
- Importing of XML and image files to the new CMS.
- So-called "bursting" of XML files, which, in this context, involves automated opening of files in Arbortext Editor for the correct setting of various file attributes.

A Decade of XML

- Development of eleven different style sheets for PDF and two for HTML.

In addition to these steps, there were also a number of investigative issues related to various business and technical aspects:

Conversion range At the time of migration, there were around 700 manuals, including translations, being maintained in the legacy system. These 700 manuals were generated from a number of configuration files that defined, e.g., conditional formatting, language, product name, and publication number. There were just over 9,700 XML files and 6,300 image files in the system. Ahead of the migration, the migration range was the subject of extensive discussions between Simonsoft and myself. These discussions concerned, among other things, whether we should convert both source and target files, and whether, for traceability reasons, we should also include historic revisions of all files. A complicating factor was, as mentioned earlier, that the time between the closure of the legacy system and the start of the new production-ready publication architecture—with all files converted and an uptime of virtually 100%—must be kept to a minimum. In the end, we chose to convert only the XML source files (i.e., English) and planned a replication of target files by using the exported translation memories. The image files were migrated in their entirety. A complete database and file export from the legacy system for archiving purposes was also done in order to maintain full historic traceability.

Relocation of certain #CDATA Parts of the technical information that had been maintained in the legacy system were entered into tables. The incentive to first enter this information into tables was that a number of publications were maintained according to the Information Mapping methodology and, for technical reasons in the formatting toolchain at that time, a tabular markup was needed in the XML file in order to visually render a structure in accordance with Information Mapping. A formatting solution that created this tabular rendering in the publishing workflow without the need for a tabular markup in the source files would have been preferable, but there were various technical obstacles to this procedure. The table element is also—from a theoretical XML perspective—a problematic and not especially “orthodox” element, as it not only represents content but also a visual concept. Consequently, this is an element that should be avoided

as much as possible and be used only when there is no other possible element that can be used to solve the same task. At the time of the migration, therefore, I wanted to resolve these tables and convert them to a linear flow of text in the form of sections. However, I wanted to keep the theoretical possibility of replicating the historical rendering in a future formatting scenario, and we therefore set attributes on all converted tables in order to have full backward traceability.

Renaming of XML and image files At the time of migration, I wanted to synchronize the naming conventions for XML and image files with the technical business regulations in force for other kinds of item data of the Swedish organization (e.g., construction articles, composite articles, purchase articles, and BOMs). The existing naming in the legacy system was based on two numerical series—one for XML files, *2xxxxxyy*, and one for image files, *1xxxxxyy*, where *xxxxx* was a five-digit number incremented by +1 for each new file, and *yy* was a signal code for the file language (e.g., *03* for English). The new naming convention involves the prefix *T* (for *thermography*) followed by a serially incremented six-digit code (e.g., *T501016* for an XML document). In this context, I chose to abandon my earlier methodology that included a two-digit suffix for language. Instead, in the new system, this is handled using metadata, which is technically a more elegant solution.

Quality assurance of certain texts In the legacy system there were a number of publications containing text on which I wished to carry out further linguistic and technical quality assurance—but not changes in meaning—and the technical consequences of this became the subject of extensive discussions in which we engaged language technologists from our translation providers, conversion specialists from Simonsoft, and the accredited linguists we use for reviewing our publications. As mentioned above, by then we had made the decision to convert only the English source file and replicate all translations by exporting the internal translation memory of the legacy system. The problems encountered were more extensive than I can go into in this article but partly concerned the fact that even minimal language changes to texts during migration would create a very large proportion of so-called “fuzzy matches” if these converted publications were then matched against the legacy system’s exported translation memory at our translation provider. A quick calculation showed that the large number of fuzzy matches would

be unacceptable from a business-economic perspective. One possible solution to this problem, which was the subject of a large amount of discussion, was to make the planned quality audit of the source files outside the legacy system and then structurally align the XML files with the existing translations and generate a new paragraph-based translation memory based on this alignment. In the end, however, we decided not to carry out the quality audit in question during this phase—a decision that, in hindsight, I think was good, as technically the possibility of carrying out such a project within the new system without establishing fuzzy matches is much greater.

After all the points of the investigation had been investigated and the relevant decisions had been taken, the Simonsoft team began the migration of the existing documentation. This was done iteratively through the migration of frozen subsets. The relocation of #CDATA and the change of the naming convention, as mentioned above, became technically complex steps in this project. However, despite this, it was possible to undertake the migration in a controlled manner and in line with the established time schedules.

In accordance with the manual for graphic brand identity that was previously established at FLIR, Simonsoft developed nine different style sheets for PDF and two for HTML in parallel with the migration:

- A4, 1 column
- A4, 2 column
- US Letter, 1 column
- US Letter, 2 column
- A5, 1 column
- A6, 1 column
- 118 mm × 165 mm, 1 column (4.65 in. × 6.50 in., a sheet-optimized size for printed matter)
- Technote A4 (1 column with sidebar, for technical memoranda)
- Technote US Letter (1 column with sidebar, for technical memoranda)
- A chunked HTML-based help format, with Java functionality
- A non-chunked HTML-based help format, without Java functionality

Subsequently, two additional style sheets were added to handle FLIR's 5000-page product catalogues in A4 and U.S. Letter format.

Recent and planned migration projects

In December 2013, we migrated some of the documentation at the FLIR-owned company Lorex (<https://www.lorextechnology.com>), a Canadian manufacturer of camera systems and solutions for security surveillance in homes, businesses, and industry. Lorex has four full-time authors who maintain documentation in the system and, after about one year of using the new system, the team leader for documentation work was able to identify great savings in the translation stage. The Lorex team has also come up with several suggestions for improvements to style sheets and systems, and, on their initiative, the ability to output internal review comments in the PDF has been introduced.

Raymarine—a world-leading manufacturer of marine electronics—was acquired by FLIR in 2010. The documentation department of Raymarine has been working with XML for seven years, and all technical documentation is written in Darwin Information Typing Architecture (DITA—an XML data model for modular authoring). Their existing system—like the case at FLIR—is based on products from PTC but with PTC's CMS Windchill instead of Simonsoft CMS. Together with Simonsoft and FLIR, the head of documentation at Raymarine has identified a number of positive effects of a migration to the new system, and migration is therefore planned for January 2016. The anticipated positive effects include the following:

- License cost sharing
- Improved release and translation workflow, providing significant time and cost savings
- Moving away from a customized CMS build to an “off-the-shelf” configuration, which will reduce the cost and complexity of future upgrades
- Cost-effective route to non-PDF output formats such as HTML5
- Potential for future repository sharing with the wider FLIR organization

Cost Savings

An analysis over a 10-year period confirms my estimation reported in my previous article (Broberg, 2004): a saving of around 75–80% of the cost of handling the corresponding documentation in a traditional workflow based on software such as Microsoft Word, Adobe FrameMaker, Adobe InDesign,

A Decade of XML

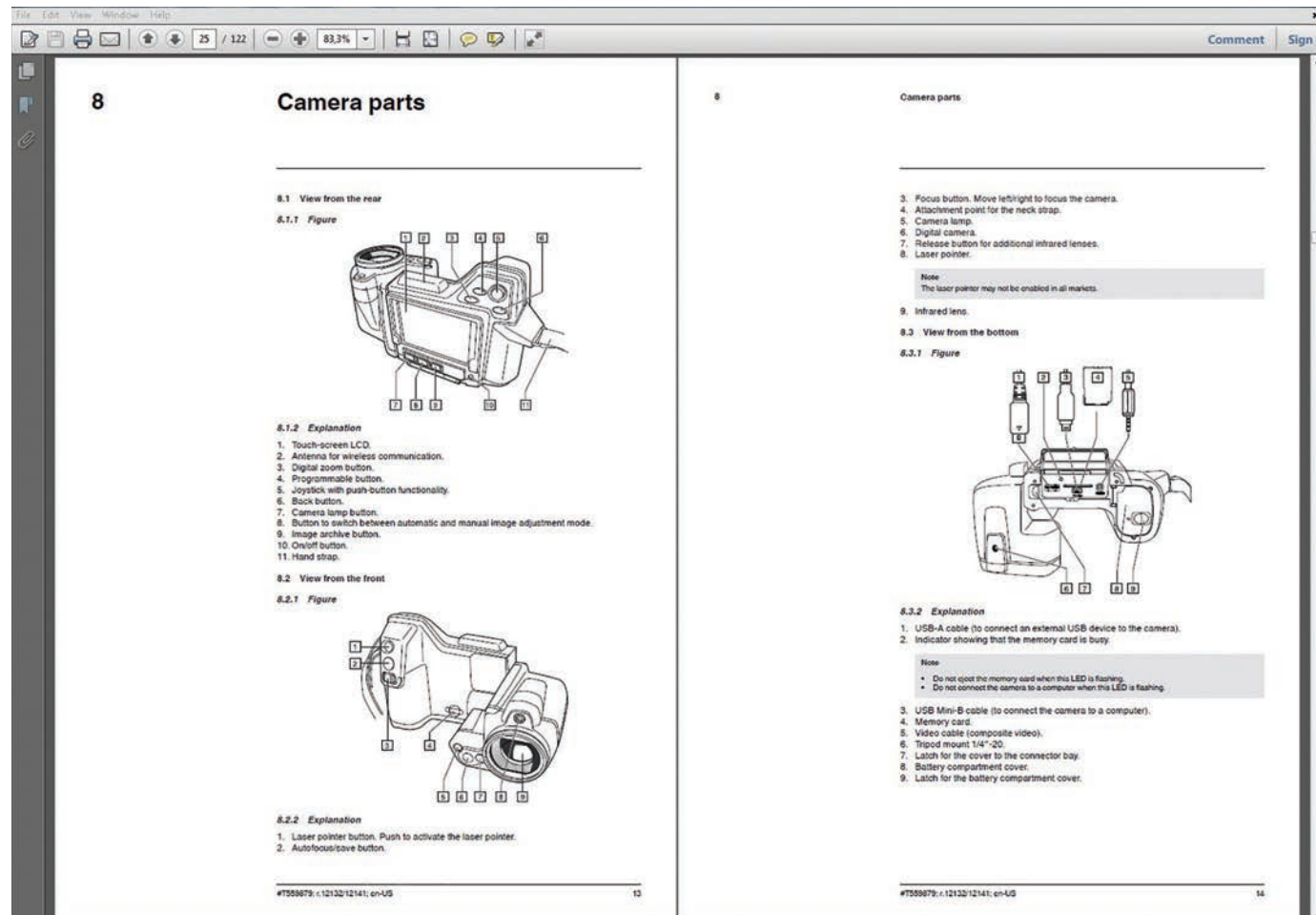


Figure 6. A View of the A4, 1-Column Style Sheet for PDF

and the like. For the translation workflow, a conservative estimate indicates a saving of approximately 25–30%.

The sites that were migrated between 2010 and 2013—ITC, GSS, and Lorex—have all been able to identify the same types of saving. These concern the following:

- A sharp increase in authors' productivity
- Complete elimination of desktop publishing work—which was either done by the authors themselves, by an external supplier, or, in the case of translations, the translation provider
- Dramatically reduced translation costs

In addition, there are many other reasons the new system has led to savings. The value of these is difficult to calculate, but they are undoubtedly relevant in this context and are dependent on processes, the IT

infrastructure, and the very efficient workflows that can be built up around XML:

- Modular writing and reuse of content
- Automated publishing to multiple output formats
- Full version control and traceability of all objects
- Simple impact analysis of planned changes (*where used* and *dependencies*)

There are also a number of technical benefits of XML that ought to be identified as highly mission critical in an analysis of a modern, corporate, long-term information strategy:

- A standard that is approved for long-term storage
- A non-proprietary data format
- A human-readable, non-binary data format

Lessons Learned

Based on my experience of system procurement, my experience working in an XML-based workflow, and the system migrations I have been responsible for, there are a number of lessons that can be drawn. These concern, among other things, the following:

The establishment of XML as a best practice for documentation benefits from a top-down approach

This is perhaps my clearest conclusion. The spread of XML for technical documentation has been slower than I would have predicted, and there are still a number of departments within FLIR that work with traditional documentation processes. I believe that the main reason for this slow dissemination might be that the establishment of an XML-based workflow should be linked to a global information strategy, the focus of which is technical documentation as an added value in its broadest sense. Such a strategy can probably be enforced more successfully at a corporate level.

Previous training or experience of the writers lacked predictive value This is one of the more interesting conclusions. During the migrations, I assumed that people with many years of experience of, e.g., Adobe FrameMaker, which imposes a structured method of working with documentation, would find it easier to get used to an XML-based workflow. However, this did not happen and the opposite was not uncommon. There are examples of authors who were only familiar with Microsoft Word and had never worked with XML but who very soon became well skilled in and motivated to use the new work method.

PowerPoint as best practice and how strongly it was anchored within ITC were underestimated In retrospect, the introduction to ITC of a page-centric type of publication in PDF based on Simonsoft's DTD was not particularly suitable. I underestimated how deeply rooted the use of PowerPoint was within the global ITC organization—both as an information tool and as an information carrier—and I am doubtful that it would have been possible to gain acceptance of the proposed type of publication. An in-depth analysis of ITC's documentation culture should have been carried out in order to find suitable processes and methods. One way forward could have been to generate PowerPoint files with a basic set of version-managed texts and images and then allow lecturers and authors to carry on working with PowerPoint tools in order

to lay one last creative hand on the presentations. The possibility of such a process should have been studied more closely.

A more appropriate choice of DTD As mentioned earlier, the Simonsoft DTD—techdoc.dtd—is a simplistic DTD with a minimal number of elements to manage the majority of information types and demands that exist within technical information. In this way, it is similar to the DTD that was used in the legacy system (flex.dtd). Without a doubt, there is much to be said for such a DTD—a small number of elements for the author to learn, low support and maintenance costs, etc. However, as the global system owner, I must look at the choice of DTD from the perspective of information security and the associated business risks, as Simonsoft's DTD is proprietary inasmuch as it is not used by any people other than Simonsoft's clients. The risk must be assessed in terms of a worst-case scenario. What would our ability be to independently replicate the global documentation environment to a minimum functional level in, e.g., 24 hours if critical core abilities or business structures were lost in the system supply chain? In light of this, today I would choose DocBook. This is also a DTD that Simonsoft offers in its system and of which I have a lot of experience in other documentation projects including technical data and multilingual publications. The advantage of DocBook is that it is maintained by the Organization for the Advancement of Structured Information Standards (OASIS), that it is a widely used DTD, that it is exceptionally well documented (<http://docbook.org>), and that there are several inexpensive editing tools that, without any configuration, can be used directly for publishing to PDF, HTML, WebHelp, RTE, etc. Against this it can be argued that an XSLT script could be produced for use in a disaster recovery to convert all of FLIR's documentation from Simonsoft's DTD to the DocBook DTD. While this is technically feasible, the cost of establishing such a script would easily escalate and would involve further steps to be handled in a critical situation. It would also break the version management of all objects in the CMS. It can be argued that DocBook has a very large number of elements compared with a simplistic DTD like techdoc.dtd and that some authors therefore feel that the documentation process is more sluggish. This view is also correct but Arbortext Editor can be configured so that most of these elements are

A Decade of XML

not visible to the author and the experience would be more like writing in techdoc.dtd. On the other hand, a DTD such as DocBook does not have the flexibility that a proprietary DTD can offer, where new attributes can easily be added to handle customer requirements (which occurred repeatedly during our project). Currently, a discussion is taking place between Simonsoft and FLIR regarding business risks and how to keep them at an acceptable level in the future.

After several years of live operation of the new documentation management system, it is our assessment that we have gained a very powerful solution, which means we are well equipped for the future. In addition, the solution has such a dynamic architecture that it can easily and cost-effectively be modified and further developed for the various types of versioning, formatting, and publishing needs that may arise in the future.

Statistics Regarding FLIR's Documentation System

	Instruments division, Sweden	ITC, Sweden	Governmental Systems, Sweden	Lorex, Canada	Raymarine, UK*
Authors	1.5	1	1	4	2.5
Publications (excluding translations)	1623**	84	69	73	250
XML files	6697	1268	470	905	5000
Image files	12,021	1260	1053	883	20,000

*To be migrated January 2016.

** Of these, approx. 300 are manuals and instructions, while the rest are technical data publications.

Reference

Broberg, M. (2004). A Successful Documentation Management System Using XML. *Technical Communication*, 51(4), 537–546.

About the Author

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Manuscript received 24 September 2015, revised 23 November 2015; accepted 23 November 2015.

Structured Authoring without XML: Evaluating Lightweight DITA for Technical Documentation

By Carlos Evia, Virginia Tech and Michael Priestley, IBM

Abstract

Purpose: We present a proposal for HDITA, an HTML5-based version of the Darwin Information Typing Architecture (DITA). We report on an exploratory study about the feasibility of using HDITA as an authoring platform for technical content. We asked how novice technical writers describe and evaluate the complexity and difficulty of the different stages of the HDITA authoring process and if novice technical writers can author effective topic-based technical content in HTML5 (HDITA) without full knowledge of XML (DITA).

Method: To evaluate the feasibility of authoring and publishing with HDITA, we modified the Instructions assignment of an introductory college course called Technical Writing. Students wrote blog posts during the authoring process and completed a survey on the perceived difficulty of HDITA. We evaluated the quality of HDITA Web deliverables with college students from diverse technical and academic backgrounds.

Results: Most author students were somewhat confident authoring technical content with HDITA, and most said they were very likely to somewhat likely to use HDITA in the future for technical writing projects. Students reported that the most difficult part of using HDITA involved Web templates and not HDITA itself. Twenty-seven students evaluated HDITA deliverables and gave them positive scores using a rubric for assessing quality technical information.

Conclusion: Acknowledging the small number of student authors involved in this feasibility study, we can still conclude that novice technical writers did not perceive creating technical documentation with HDITA as difficult or highly complex. Most student evaluators were able to complete the assigned tasks following the instructions created in HDITA.

Keywords: DITA, structured authoring, XML, HTML5, feasibility study

Practitioner's take-away:

- HDITA is an experimental version of Lightweight DITA that uses HTML5 tags instead of XML for structuring technical content.
- Students in the Technical Writing course, perceived as novice technical authors, created sample procedural projects using HDITA for Web deliverables.
- Novice technical writers did not find the HDITA authoring process particularly difficult, and their deliverables received positive comments and feedback from evaluators.
- HDITA can simplify the technical authoring process while producing effective deliverables. Authors without XML experience (such as Web developers, programmers, etc.) can use DITA for projects.

Structured Authoring without XML

Introduction

Publications from technical communication research and practice frequently discuss the pros and cons of structured authoring, single sourcing, topic-based architecture, and component content management systems. Extensible Markup Language (XML) is often mentioned as a key enabler of that kind of authoring and publication work. Not without problems and criticism, XML has been in a mainly stable relationship with the field of technical communication for over a decade. Some have even said that a “thorough understanding” of XML is essential for students of technical writing (McDaniel, 2009, p. 6). However, XML has also been labeled “cumbersome and complex” (Johnson, 2015, para. 24) and even had to be defended (O’Keefe, 2010) when it was blamed for the death of creativity in technical writing.

The Darwin Information Typing Architecture (DITA) is an XML-based, “end-to-end architecture for creating and delivering modular technical information” (Priestley et al., 2001, p. 354). Originally developed by IBM, DITA is now an open standard maintained by the non-profit Organization for the Advancement of Structured Information Standards (OASIS). As one of the main XML grammars used for technical communication purposes, DITA is also the recipient of mixed comments from practitioners.

For creators of technical content, DITA offers the following benefits: it streamlines the content creation process, it increases the quality of content by standardizing it, and it allows authors to leverage content in many different ways, which include reusing it, publishing it in different formats, and translating it (Samuels, 2014). From a managerial perspective, Hackos presents a list of DITA’s business advantages, which suggest that DITA will “[promote] the reuse of information quickly and easily across multiple deliverables,” “reduce the cost of maintaining and updating information,” “enable continuous publishing,” “share information across the global enterprise,” “reduce the cost of localization,” and “reduce the technical debt caused by inadequate, incorrect, and unusable legacy information,” among others (2011, p. 10). Despite DITA’s benefits for the technical communication workflow, and its many industry evangelizers and users, recent articles from the technical communication blogosphere have characterized DITA as “overly

complex” (Kaplan, 2014, para. 13) and “far more complex than it needs to be in almost every dimension” (Baker, 2014a, Responses, para. 7).

Identifying (and reducing) DITA’s complexity is more difficult than it might appear: each of DITA’s features has its adopters and defenders, and DITA’s detractors rarely agree on which features are too complex for technical authors. But within the OASIS DITA Technical Committee, there is general agreement on the value of a lightweight entry point to DITA that preserves some key features, including DITA differentiators such as specialization and robust reuse mechanisms, while providing an easy upgrade path to a more complete feature set. Co-author Priestley formed the Lightweight DITA subcommittee at OASIS to focus on trimming the element and feature list of DITA to the minimum necessary to enable core reuse capabilities in areas such as education, marketing, and manufacturing. Another focus of the subcommittee is to free the lightweight specification from a dependency on XML, which allows DITA as a standard to exist across formats, including HTML5 and Markdown.

Lightweight DITA is still in development and not ready for mass dissemination. However, many of the ideas it represents are already mature enough to be tested.

In this paper, we present a proposal for an HTML5-based version of Lightweight DITA, named HDITA, and report on an exploratory study about the feasibility of using HDITA as an authoring platform for technical content. Our study took place during an online introductory technical writing course, taught by co-author Evia, at a major research university in the United States. Our main objective in sharing this proposal and preliminary results with readers of *Technical Communication* in industry and academia is to discuss the feasibility of creating technical content in HDITA and obtain feedback on the potential impact of Lightweight DITA for their work processes and environments. The Lightweight DITA subcommittee will also use that feedback for further evaluation of simplified DITA concepts with larger groups and industry settings.

We designed and conducted this research project primarily as an authoring study. Although we evaluated the quality and effectiveness of technical content produced in the HDITA workflow, our main objective was to focus on the author experience as non-expert technical writers encountered structured authoring

for the first time. We elaborate on the strengths and limitations of DITA in the practice and outcomes of technical communication.

Technical Communication and DITA XML

The relationship between technical communication and XML (and its predecessor SGML) covers almost two decades. A historical perspective of XML's contributions to the field of technical communication is beyond the scope of this feasibility study. However, some major milestones worth noting in this relationship include the explicit role that XML took in *Information Development: Managing Your Documentation Projects, Portfolio, and People* (2007), the revised version of JoAnn Hackos's seminal book *Managing your Documentation Projects* (1994). Whereas the 1994 book talked about electronic publishing in general terms, the 2007 book includes explicit connections to XML and DITA, not just as tools for writing but also as part of a documentation management methodology. Rockley (2003; 2012), Pringle & O'Keefe (2003; 2009), Self (2011), Vazquez (2009), Kimber (2012), White (2013), Bellamy et al. (2012), Hackos (2011) and others have published and revised books for practitioners emphasizing and expanding coverage on the importance of XML (and DITA) in technical documentation and content management work environments.

DITA "is a technical documentation authoring and publishing architecture that is based on principles of modular reuse and extensibility" (Priestley et al., 2001, p. 352). DITA's modular structure is based on a generic topic type that could describe almost any content, from which are derived three main information or topic types: concept, task, and reference, which "represent the vast majority of content produced to support users of technical information" (Hackos, 2011, p. 7). In a DITA authoring environment, writers create "technical content by assembling topic-oriented information types or blocks of information that serve particular functions in a document. A step in a set of instructions and an ingredient in a recipe are examples of information types" (Swarts, 2010, p. 133). As part of technical genre development, a DITA-based authoring system ensures that all the parts are present and that parallel information can be recognized.

Bellamy et al. summarize the main benefits of writing in a topic-based environment with DITA for

users and authors as follows: DITA allows users to "find the information they need faster, accomplish their goals more efficiently, [and] read only the information they need to read." DITA enables technical writers to "maintain and reuse topics more effectively, organize or reorganize topics more quickly, [and] share and distribute the work on topic files more easily, which increases writer productivity" (2011, p. 17).

There are no official figures about the usage and adoption of DITA as a platform for authoring technical documentation. Keith Schengili-Roberts, an information architect known online as *DITAWriter*, maintains an "informal list of firms that are using DITA XML in some form in their documentation efforts" (2015a, para. 1). As of July 2015, the list included 532 companies. Schengili-Roberts analyzed LinkedIn profiles of thousands of technical writers, and his findings imply "that potentially there are 1,400–3,000 firms worldwide currently using DITA" (2015b, para. 3).

The next section presents critical perspectives against XML and DITA. Some of the counterarguments presented in the following section inspired the simplified structured authoring approach evaluated in this study.

The case against XML and DITA

As members of the OASIS DITA Technical Committee, we work on advancing the DITA standard and teaching novice technical writers about its many benefits for authors, managers, and users. However, we cannot ignore feedback and counterarguments. Despite XML and DITA's strong presence in technical communication, some practitioners argue, among other things, about the complexity of DITA's many XML tags, the need for specialized tools to produce end-user deliverables, and the high learning curve for specializing DITA beyond the core concept, task, and reference topic types.

In 2007, technical and fiction writer Larry Kollar hit a nerve in the field of technical communication with a series of blog posts titled "XML Heresies." The Yahoo! blogging platform hosting the posts has gone offline since. Nevertheless, their author agreed to share the original "heresies" via email (L. Kollar, personal communication, February 22, 2015). Kollar questioned the need for XML in documentation projects and pondered if the fixed structured imposed by XML was actually beneficial to the profession: "Do (XML-based publishing systems) free us to write better documentation, or do they stifle the creativity that's

Structured Authoring without XML

essential for human-to-human knowledge transfer?” (Kollar).

Consultants and structured authoring advocates reacted to Kollar’s comments, and some said he displayed “a very myopic view of technical writing,” as reported by Abel (2007, para. 5). A few years later, Sarah O’Keefe wrote a column for *Intercom* defending XML from critics who called it “the death of creativity in technical writing.” In XML-based authoring environments, O’Keefe argued, technical communicators “have the most opportunity for creativity in crafting sentences, paragraphs, topics, and groups of topics that explain complex concepts to their readers” (O’Keefe, 2010, p. 37).

More recently, practitioners lament that, whereas programming and scripting languages move toward simplified syntax and tagging systems, technical communication continues to rely on XML and complex, nested tag structures.

What are we seeing? Simplification. Ease of use. A learning curve that gets less steep every time. Languages that drop features that aren’t used, or aren’t used often. And what has techcomm poured resources into? DITA. An arcane, overly complex language with a massive learning curve that requires specialized tools. (Kaplan, 2014, para. 13)

Popular technical communication bloggers Mark Baker and Tom Johnson have articulated arguments about the perceived complexity of XML and, particularly, DITA. According to Baker, “XML is not the answer. Structured writing may be the answer. XML is one way to implement structured writing” (2014b, para. 1). After experimenting with DITA as an authoring platform, Johnson authored a blog post titled “10 reasons for moving away from DITA.” Although some of Johnson’s claims come from his confounding DITA the XML standard with DITA-aware tools, Johnson’s message is loud and clear: “Writing in XML is more cumbersome and complex” (2015, para. 24).

No single technical writer, especially not a novice one, is expected to learn all available DITA tags in order to use DITA as an authoring and publishing platform. While a generic DITA topic only requires the XML identifier and a title, the main complaints against the standard focus on the increasing page count for its spec, which was in part due to adding a smaller “starter”

document type to the package. Therefore, the challenge for the DITA Technical Committee was how to decrease complexity for new users of DITA when efforts to provide easier entry points were just perceived as added complexity.

The answer was to target Lightweight DITA not as another set of document types within the DITA specification but as a separate specification that would be judged on its own merits. The following section introduces the proposal for HDITA, which is an HTML5-based version of Lightweight DITA.

HDITA: A Proposal

The idea of a simplified version of DITA to reduce the documentation standard’s learning curve has been around for a few years. Back in 2011, the DITA Technical Committee was talking about a “limited DITA profile,” which was still XML-based, but depended heavily on HTML tags (such as <p> and) to simplify many semantic structures of full DITA. As the concept of Lightweight DITA developed further, at one point it became an XML sub-set of DITA that included, for example, 27 possible elements inside a topic, whereas full DITA includes a possible combination of 90+ elements. Originally, Lightweight DITA was planned as a component of the DITA 1.3 specification, but interest from members of the DITA Technical Committee, vendors, and researchers pushed it out of the main specification and into its own parallel and compatible standard. The purpose of Lightweight DITA is not to replace full DITA XML. If anything, Lightweight DITA provides basic DITA access to authors who do not need all the standard’s features but whose deliverables should be compatible with full DITA XML, if needed.

In 2014, co-author Priestley introduced a proposal to align a lightweight DITA profile in XML with an equivalent markup specification based on HTML5. While XML-based publishing chains remain the industry standard for many content-centric industries (such as publishing, pharmaceutical, and aerospace), this proposal responded to concerns about their complexity, especially as a barrier to new adopters or contributing authors.

The challenges with the HTML5-based approach were based on a lack of standardization: each new extension of HTML5 introduces its own additional semantics and constraints, locking the content into a particular tool or vendor pipeline. The additional

semantics and constraints may also require a custom authoring environment, resulting in another barrier to content portability, without the advantages of authoring-time validation that an XML-based approach provides. Finally, even though the approach may eliminate processing steps for the case of simple content, more complex content scenarios—such as content reuse and filtering, or indexing and link redirection—require additional processing steps that reintroduce the complexity of an XML-based approach, without the advantage of existing standards-based solutions.

This proposal suggests a third way: defining both a lightweight XML model based on DITA that can be used for validated authoring and complex publishing chains and a lightweight HTML5 model that can be used for either authoring or display.

The two schemes—provisionally named XDITA and HDITA—are designed for full compatibility with each other as well as conformance with the OASIS DITA and W3C HTML5 standards. They give HTML5 users a set of standardized mechanisms to access the power and flexibility of DITA's reuse and specialization capabilities and give DITA users a way to integrate and interact with HTML5-based content systems without complex mapping or cleanup steps.

XDITA, still in an experimental stage, is outside the scope of this paper and will be implemented and evaluated in the future. The feasibility study reported in this manuscript applies exclusively to HDITA, because

HTML5 and DITA are now close enough to achieve a reasonable and semantic mapping with the application of a few simple constraints. Figure 1 compares a basic topic in DITA XML to a simplified topic in HDITA.

Taking advantage of HTML5's custom data attributes, HDITA allows topic specialization without XML tags or advanced metadata. The resulting topics are easier to author and read by writers with basic HTML knowledge and can be parsed through a browser immediately in simple Web versions. We hypothesize that a structured-authoring language based on HTML5 can make DITA more accessible and easier to adopt by technical writers and Web professionals who work in HTML but are not familiar with XML. Figure 2 shows the specialized DITA task topic and the same simplified task topic in HDITA.

Summarizing, HDITA is not presented as a potential replacement for DITA XML. HDITA's main characteristics and advantages are as follows:

- Simplified authoring by using a small set of semantic tags and attributes in HTML5.
- Instant presentation layer for basic deliverables without the need of a transformation process.
- Compatibility with XDITA or full DITA XML for advanced processing and filtering.
- Possibility of using a wide variety of commercial and open source editors for HTML5 instead of specialized tools.

Figure 1: DITA topic compared to HDITA simplified topic

DITA Topic	HDITA Topic
<pre><topic> <title>The point of it all</title> <shortdesc>I can sum it up here</shortdesc> <body> <p>I can say some more stuff</p> <section> <title>Stuff</title> <p>And so on</p> This Is A List </section> </body> </topic></pre>	<pre><article> <h1>The point of it all</h1> <p>I can sum it up here</p> <p>I can say some more stuff</p> <section> <h2>Stuff</h2> <p>And so on</p> This Is A List </section> </article></pre>

Structured Authoring without XML

Figure 2: DITA task compared to HDITA task

DITA Topic	HDITA Topic
<pre> <task> <title>How to do something</title> <shortdesc>Introduction to this specific task</shortdesc> <taskbody> <context>Use only when ready</context> <steps> <step> <cmd>Plan something</cmd> </step> <step> <cmd>Do something</cmd> </step> <step> <cmd>Evaluate something</cmd> </step> </steps> <example>Like this</example> </taskbody> </task> </pre>	<pre> <article data-hd-class="task"> <h1>How to do something</h1> <p>Introduction to this specific task</p> <section data-hd-class="task/context"> <p>Use only when ready</p> </section> <section data-hd-class="task/steps-informal"> <p>Plan something</p> <p>Do something</p> <p>Evaluate something</p> </section> <section data-hd-class="topic/example"> <p>Like this</p> </section> </article> </pre>

- Potential for involving professional communities of Web developers and programmers, who do not necessarily work with XML but most likely are proficient in HTML.

The next section focuses on the benefits of HDITA for technical authors, and it presents the conceptual model for content creation we evaluated in this study.

The HDITA Author Experience

To minimize the potential complexity of authoring and displaying technical content, HDITA aims to simplify the learning curve of DITA XML while preserving its key benefits of modularity and reuse. In the introduction to their edited collection *Content Management: Bridging the Gap between Theory and Practice*, George Pullman and Baotong Gu talk about new demands for technical communicators. When discussing the effects of content management systems on the balance of creation and delivery of information, Pullman and Gu address the “decontextualization at the input stage and the recontextualization at the output stage” of content delivered through a CMS (2009, p. 8). In an authoring workflow with DITA XML, for example, a team of writers could create separate

topics with related steps that, when transformed into deliverables, can appear together in one single task as a PDF or a concept as an HTML file. With HDITA, authors can still create content in such an assembly-like environment. However, they can also display content directly in the language (HTML5) in which it was originally written.

That unpacking and repacking of content is at the core of Rick Yagodich’s *Author Experience: Bridging the Gap between People and Technology in Content Management*. Yagodich introduces a content communication process that flows from communicator to audience (and vice versa). Yagodich’s model includes three parts: input, storage, and output. In the example DITA authoring system from the previous paragraph, *output1* could be a PDF filtering information for a specific type of audience, and *output2* could be a website with information for all audiences. An author in such a process could be disconnected from the final output of her content, and her input work could be limited to what the storage tags and constraints expect from her. Yagodich suggests the creation of a translation layer between the storage and the various output channels and yet another “layer of translation so that the input logic and paradigms make sense to the authors, rather than simply mirroring the storage model” (2014, p. 4).

Yagodich's model, however, resembles Shannon and Weaver's linear process of communication (1949), which has been criticized for treating communication as a mechanical exchange without focusing on the production of meaning (Fiske, 1990) or reducing meaning to content delivered without "allowance for the importance of social contexts and codes" (Chandler, 2002, p. 176). Rebekka Andersen (2014) presents a more semiotic and humanistic model of a similar workflow (a content management system and the content strategy framework that supports it) with content authors (users can be included in this category) and a reception stage with deliverables for end-users that is beyond the transmission's input and output. The middle storage point is represented by a more complex combination of an XML repository, an automated assembly and publishing server, and a delivery engine.

Combining the work of Yagodich and Andersen, we created the conceptual model for an authoring experience with HDITA:

- Authoring/input: Content authors will be directly connected to the repository by using HTML5 for both processes instead of XML.
- Process/storage: Content assembly and delivery sections will be more transparent when authors have direct control over simple text maps and filtering capabilities.
- Reception/output: The delivery of end-user products with customized content, which can be HTML5 or any transformation provided by DITA XML tools.

We investigated the feasibility of this model in a college-level technical instructions assignment, which is described in the following section.

HDITA feasibility study

In order to evaluate the feasibility of authoring and publishing technical content with HDITA, we modified the Instructions assignment of an introductory technical writing course at a major research university in the United States. The technical writing service course, "which helps future engineers, scientists, and managers succeed in their careers, works with the student's disciplinary knowledge to mediate technology, science, or business for users" (Coppola, 1999, p. 259). The particular section we modified was conducted online

and was not for students majoring in Professional and Technical Writing. The students, with subject matter knowledge in technical and scientific concepts, were new to technical writing; therefore, we perceived them as novice technical writers with the potential to become casual or formal practitioners after graduation.

Our research questions for the feasibility study were the following:

1. How do novice technical writers describe and evaluate the complexity and difficulty of the different stages of the HDITA authoring process?
2. Can novice technical writers author effective topic-based technical content in HTML5 (HDITA) without full knowledge of XML (DITA)?

The Technical Writing course's learning objectives and assignments traditionally include a basic HTML writing activity for online presentation of content. They also include a technical instructions project, which focuses on developing procedural information to solve users' problems. Our revised project combined those assignments under the following description:

You need to write Web-based instructions for a real-life situation. Virginia Tech asked you to develop documentation showing students how to use LibreOffice as an alternative to Microsoft Office or Apple iWork. Your job is to write instructions guiding a first-year college student on how to do the following:

- Download and install LibreOffice
- Write a letter in LibreOffice Writer
- Create a simple spreadsheet in LibreOffice Calc
- Create a presentation in LibreOffice Impress.

You should include examples and pictures, but don't make a whole tutorial on all the LibreOffice features. Instead, focus on specific user tasks.

By combining the introductory HTML project and the Instructions module already included in the syllabus, we did not have to make major modifications to the course. The new content to introduce DITA and HDITA only added a couple of hours to the existing lesson plans. Furthermore, the assignment's purpose was not solely to teach students about HDITA. The module containing this project started with discussions

Structured Authoring without XML

about rhetorical principles for developing user-oriented tasks. The students read relevant chapters from their course's primary textbook, Markel's *Practical Strategies for Technical Communication* (2013), and from Pringle and O'Keefe's *Technical Writing 101* (2009). When advocating for content about XML in technical writing courses, McShane proposed to combine "the theory (single sourcing), methodology (modular writing), and technology (content management) to support, apply, and guide it" (2009, p. 83). In our project, HDITA influenced all three aspects of that formula, but the assignment was not just about writing HTML5 tags.

The online Technical Writing class had eighteen students (12 male and 6 female; 5 non-native English speakers) whose ages ranged between 19 and 28 years old. Academic majors represented in the course were Mathematics, Computer Science, Electrical Engineering, General Engineering, Biology, Animal and Poultry Sciences, Dairy Science, Environmental Science, Theatre Arts, and Construction Engineering.

All data collection was conducted with approval from the Virginia Tech Institutional Review Board under protocol #14-745.

Prior to this assignment, the students had not been exposed to XML as an authoring tool. Some of them, majoring in computing-related fields, had interacted with XML as a layer in database-driven computing projects. The students had no previous knowledge of DITA. We informed them of the project's experimental nature and the extra lessons they received contained information about DITA's topic structure (including concepts, tasks, and references) and HDITA's syntax. However, the course content did not cover DITA XML. For the layers of automated assembly and delivery, because HDITA is still not integrated into the DITA Open Toolkit or other DITA-aware tools, we introduced the students to Jekyll (<http://jekyllrb.com>) via GitHub Pages (<http://pages.github.com>) to take advantage of a template for Web deliverables created for a plugin of the DITA Open Toolkit.

Once the students authored and coded their HDITA topics, we asked them to create maps in YAML syntax (<http://yaml.org>), which then connected to a Jekyll template we provided for deployment in GitHub Pages. The Jekyll template generated a responsive, mobile-ready website following Andersen's observation about content management leaders, commenting on how Web-enabled mobile devices are "revolutionizing

content consumption—and thereby production" (Andersen, 2014, p. 126).

Figure 3 shows a student's sample HDITA code for a task and the transformed version of that topic when seen as the GitHub Pages output on a mobile device.

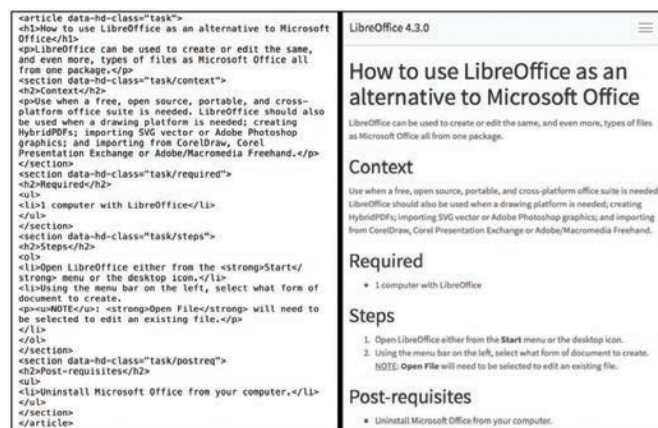


Figure 3: Student HDITA code and responsive Web deliverable

To answer our research questions, we asked the Technical Writing students to compose reflection blog posts documenting their progress, problems, and accomplishments as they worked on the assignment. Once their projects were submitted, students also had to take a survey about their experiences working with the authoring, processing, and output stages of the assignment. The next section presents results and findings of the feasibility study as we revisit our research questions.

Results and Findings

Describing HDITA's levels of difficulty

Our first measure to evaluate the Technical Writing students' perceptions about complexity in HDITA and the overall difficulty of the Lightweight DITA authoring experience was an optional survey they took after completing the Instructions project. We received twelve usable responses. The following questions asked students about their level of confidence with specific stages of the authoring process and gave them Likert scale-like possible answers (Very confident, Somewhat confident, Neutral, Not very confident, and Not confident at all):

“How confident do you feel authoring topics in HDITA?” Nine students selected “Very confident” (2) or “Somewhat confident” (7), and only two answered “Not very confident” (1) or “Not confident at all” (1).

“How confident do you feel writing task-oriented instructions?” Eight students answered “Very confident,” two answered “Somewhat confident,” one answered “Neutral,” and one responded “Not confident at all.”

“Would you use HDITA if you had to write Web-based instructions in the future?” Ten students selected “Very likely” (6) or “Somewhat likely” (4), and two answered “Not very likely” (1) or “Not likely at all” (1).

“Would you recommend HDITA to colleagues or peers who have to write instructions?” Ten students selected “Very likely” (6) or “Somewhat likely” (4), and two answered “Not very likely” (1) or “Not likely at all” (1).

The last question asked student authors to rank the following activities, from easiest to most difficult, in the process of creating the Instructions assignment:

- Authoring/input stage:
 - Analyzing the audience’s needs for your project
 - Conducting research for your instructions
 - Writing tasks, concepts, and references
 - Making maps with topics
- Storage/process stage:
 - Learning and using the HDITA tags
 - Uploading your topics to GitHub
- Reception/output stage
 - Presenting Web deliverables in GitHub Pages
 - Editing your deliverables
 - Evaluating the usability of your deliverables (this stage was completed, with modifications, by the first author after the course ended).

“Learning and using the HDITA tags” and “Uploading your topics to GitHub Pages” were consistently ranked as difficult with the latter marked as the most difficult. All other steps were ranked as easy to complete.

We obtained additional, qualitative information to evaluate students’ perception of complexity in an

HDITA authoring workflow through reflection posts they had to write while working on the Instructions assignment. We collected a total of 38 reflection posts and coded their comments in a stakeholders’ relationship table. We documented the positive, neutral, and negative statements made about each stage of our model of content management communication (Table 1).

Table 1: Stakeholders’ relationship table with students’ qualitative feedback

	Positive	Neutral	Negative
Authoring/input	9	1	1
Process/storage	12	3	6
Reception/output	7	2	1

The survey and reflection posts show a mostly positive student reaction for the authoring/input stage and more neutral to negative statements for the process/storage, with comments like the following (all students’ comments are presented as they were written, including any errors or typos):

Overall, I think HDITA and GitHub are awesome ways to create files and webpages. I really like the format and structure of the files that HDITA allows. Once the initial basics are mastered, I feel like it allows you to help yourself along in a way that most programs do not. (Female student majoring in Mathematics with a minor in Computer Science.)

So far, HDITA seems fairly straightforward to me, and I like the basic layout of the instructions assignment. However, I am wondering if that is a bad thing - for all I know, I might be doing everything completely wrong. Hopefully not, but if I encounter trouble, I will post and ask my questions! (Female student majoring in Theatre Arts.)

Being a Computer Science major and dealing with HTML/XML before, getting a grip on HDITA wasn’t too challenging for me. I think this is a good paradigm to use for making instructions, because of the formatting capabilities with HDITA. (Male Computer Science student.)

I have used HTML in the past for various simple projects, but this method makes creating clean, well

Structured Authoring without XML

formatted pages a lot less of a headache. Getting everything started has been relatively easy so far. (Electrical Engineering male student.)

I do not have any experience with html at all, in fact this is actually my first time doing anything like this. Once I put everything together, the design looked really professional and I was pleased with the outcome. I felt like I was able to create something nice even as a beginner. It made me feel good that I made it on my own. It was very useful in this way. (Female student in Animal and Poultry Sciences.)

A few comments were neutral to negative about the authoring experience:

This class is the first experience I have had with HTML, but I have had previous programming experience in other languages so it hasn't been very difficult. However, learning the tags and formatting has been a minor challenge. Initially I thought HDITA was more complicated than it actually is, and I have spent a lot of time doing things 3-4 times when I really only needed to do it once. (Female Computer Science student.)

I largely enjoyed this project, however i was uncomfortable with the reference portion of the repository. I still am not sure if i did this section how it was suppose to be done (, , ,) Overall though, this project was a nice combination of everything else we have done previously. (Male General Engineering student.)

Some students actually wanted to dig deeper into the project and requested an API or a way to customize the template:

I've worked with HTML and CSS before, as well as a handful of other languages. I only have a single remark about HDITA : could i get a simple API of sorts? Something along the lines of 'this tag does this, this tag does that, etc.' would have helped me out a bunch. Besides that, it was a unique experience. (Male student majoring in General Engineering.)

I think an API would be really helpful for inexperienced HTML users (like myself), because I

have spent extra time looking up commands only to later find out they don't even work correctly the way I'm trying to use them (, , ,) I do really like the end result that HDITA produces as it is very professional for amount of time needed for production, and am still having fun customizing my websites. (Female student majoring in Mathematics.)

Upon completing the assignment, I can't say I had any problems with the syntax or understanding of HDITA. I've also used Github in the past, so picking that up was not a challenge for me either. In the future, I'll probably learn how to change how the structure of the page looks to make it prettier. I guess a suggestion would be including how to do this in part of a lesson as something optional for our assignment if we have extra time. Other than that I can say that this assignment was pretty interesting and I had a good time doing it. (Male Computer Science student.)

Negative comments were, as in the survey results, grounded in the translation from storage to output/reception, as students struggled to generate their Jekyll sites in GitHub Pages.

I have used HTML in the past, and I feel HDITA will be a great tool to help programmers create clean, straight-forward instructional webpages. Once users get used to HDITA's tags they will quickly be able to create websites. So far, the only difficulty I have had was Github related. (Male General Engineering student.)

Some negative comments, however, evolved into positive comments or included troubleshooting recommendations for peers:

No matter how many time I redo the uploading and setup, github just keeps sending me emails saying page build failure. It took me a whole day to figure this out. I checked that file again, and you know what? There is a space in front of a topic, which it is not supposed to be there. Well, I think that tells us when dealing with things you don't know much about, be really, really, really careful. (Male Electrical Engineering student.)

Well, honestly, so far it's been disastrous. I've gotten a page setup (after about 45 minutes of mocking

about in virtual mud), and now all that's showing is the readme.md... How can I fix this? any tips are welcome. (Male General Engineering student.)

A couple of minutes later, that same student posted the following comment: "Nevermind, i made a stupid mistake. all fixed now!"

I do not really understand how to do any of this HTML stuff because I have never used it before. I am not a computer person and I am studying biology, so I don't really get how this will help me in the future. I sort of understand how to do basic html, the kind we did (in an earlier assignment) but doing this HDITA is very confusing. (Female student majoring in Biological Sciences.)

Eight minutes later, the student added the following: "Writing the code was easier than I thought it would be but it took me forever to get it to sync with github."

Creating effective HDITA documentation

In order to evaluate the effectiveness of projects created in HDITA by novice technical writers, we first graded them based on a rubric developed using Markel's guidelines for creating instructions (2013) and Pringle & O'Keefe's recommendations for writing task-oriented information (2009). The average grade on the project was 16.4 on a scale of 0 to 20 points. Students' grades were not affected by their opinions of HDITA as an authoring platform, and appropriate use of HDITA tags was just one item in the grading rubric. Two students dropped the course before this assignment, so we collected a total of 16 HDITA submissions. Common errors included those regularly seen in the first draft of an instructions assignment in similar courses, but errors related to HDITA tags were also frequent. Table 2 shows

some frequent and relevant errors found in the different stages of the HDITA authoring process.

A former graduate teaching assistant in the Professional and Technical Writing program at Virginia Tech conducted a second round of grading once the course ended. The average grade on this round was 17.2 on a scale of 0 to 20 points.

For end-user evaluation of quality, we conducted sessions with 27 students enrolled in courses in computer science, statistics, and English. We recruited students in several introductory summer courses, and participants received extra credit (one numerical point on their final term grade) for completing a quality review of online instructions for installing LibreOffice written in HDITA. The evaluators were 12 male and 15 female students whose ages ranged from 18 to 34 years old. These students were not enrolled in the Technical Writing course at the time of the evaluation, and they were assigned randomly selected HDITA projects from Technical Writing students who gave us written permission to share their work. The student evaluators were asked to conduct the following activities:

1. Answer a questionnaire about their previous experience with the subject matter of the HDITA deliverables (installing and using office software).
2. Follow the instructions to (a) download and install LibreOffice, and (b) complete at least one of the following tasks: write a letter in LibreOffice Writer, create a simple spreadsheet in LibreOffice Calc, or create a presentation in LibreOffice Impress (evaluators self-reported on this step).
3. Complete a survey based on the IBM quality checklist for evaluating technical documentation (Carey et al., 2014).
4. Provide optional information about positive and negative aspects of the HDITA deliverables.

Table 2: Frequent and relevant errors found in HDITA deliverables

Stage	Error	Frequency (in 16 student projects)
Authoring/input	Some steps are not written in imperative mood or not properly numbered	9
Storage/process	Code displays improper use of HDITA tags	5
Authoring/input	The deliverable presents serious spelling or grammar problems	4
Authoring/input	Content is too technical for the target audience	4
Authoring/input	Topics lack images to explain concepts or tasks	2
Reception/output	Web deliverable not displaying in GitHub Pages	1

Structured Authoring without XML

To determine the evaluators' experiences with the HDITA deliverables' subject matter, we asked them if they had ever interacted with LibreOffice or similar office suites and how comfortable they were with their skills installing new software on their computers. No student evaluator had previous experience with LibreOffice, but 93% of them had worked with Microsoft Office, 81% with Google Docs, 33% with Apple iWork, and 11% with IBM Collaboration/Lotus. Fifteen percent of the student evaluators said they were very good at downloading and installing software, 37% described themselves as good, 33% as fair, 7% as poor, and 7%, as very poor.

When the quality evaluation sessions concluded, 5 of the 27 student evaluators said they could not complete the tasks as written. Three of those five evaluators were using Mac computers and received randomly assigned instructors for Windows. Another evaluator said she needed more details about the tasks, and the fifth said he couldn't find what he was looking for on the website's menu.

Once the student evaluators conducted tasks with the HDITA deliverables, they completed a survey based on the IBM quality checklist for evaluating technical documentation (Carey et al., 2014). On a scale of 1 to 10, where 1 was "among the worst" and 10 was "among the best, could be used as a model," student evaluators had to rank the randomly assigned HDITA projects on the following characteristics:

- Easy to use (task orientation, accuracy, completeness).
- Easy to understand (clarity, concreteness, style).
- Easy to find (organization, retrievability, visual effectiveness).

Table 3 aggregates the scores received for the randomly assigned HDITA deliverables. The scores emphasize the overall average and minimum value assigned to the projects.

Table 3: Mean and minimum score received on quality documentation characteristics

Quality characteristic	Mean score	Minimum score received
Easy to use	7.26	4
Easy to understand	7.44	4
Easy to find	7.31	3

When asked to provide additional information on the elements they found difficult to follow in the online instructions created with HDITA, the student evaluators commented on the placement of images, the limitations of a side menu bar as the only available navigation tool, and the fact that the instructions they received after the random selection were written for a different operating system than the one installed on their laptops. When asked about elements that they found easy to follow, student evaluators commented on the detailed "step-by-step nature" of the instructions, the use of screen captures with examples, and the overall professional look of the websites ("It reminded me of something I would see from a major software company," said one of the evaluators).

Next, we present the study's conclusions and offer recommendations for further research with Lightweight DITA.

Conclusion and Recommendations

Acknowledging the small number of student authors involved in this study, we can still conclude that creating technical documentation with HDITA was not perceived as difficult or highly complex by novice technical writers. The deliverables produced in HDITA were similar in content to those produced in other introductory technical writing courses with tools like Microsoft Word. However, the students involved in this project created responsive Web-based instructions that they could filter and manipulate using text-based maps. The students also learned about the benefits of structured authoring and topic-based writing without the additional layer of complexity of XML.

Students struggled with the translational component that assembled their topics into websites via Jekyll and GitHub Pages. Nevertheless, most of their comments reflected success after a few attempts. This problem was unique to the feasibility study, because HDITA is still not integrated with DITA-aware tools. In future work, we do not foresee using Jekyll as a translational layer in Lightweight DITA.

Most student evaluators were able to complete the assigned tasks following the instructions created in HDITA. Evaluators reported problems related to the deliverables' navigation and image layout, which can be attributed to the Jekyll template and not to the quality of content and structure in the HDITA source authored by novice technical writers.

We recognize that a classroom environment, compared with the workplace, has great time constraints, and faculty worry about using class time to teach new tools or technology at the expense of course content. Our results show that, combining the already existing modules in HTML and instructions from the syllabus, the HDITA elements included in the course supported the content goals and enhanced the students' technical writing experience. We hope these findings also help practitioners, as HTML is a skill more frequently desired than XML in technical writing and content authoring positions. HDITA represents a step forward in combining the advantages of DITA with the popularity and easiness of HTML.

Benefits of generating Web documentation in HDITA instead of plain HTML5, or even a combination of HTML5 and Jekyll, include access to the transformations from the DITA Open Toolkit and community plug-ins. Once the online course ended, we selected three student projects (with proper permission from the authors) and converted them to DITA XML through Jotsom (<http://jotsom.com>), an experimental online authoring and transformation environment developed by Don Day, who is also a member of the OASIS Lightweight DITA subcommittee.

The HDITA topics created by the Technical Writing students generated valid DITA XML files in which, for example, an HDITA `<article data-hd-class="task">` tag was an actual DITA `<task>` task, and an HDITA `<section data-hd-class="task/steps-informal/ul/li">` tag was an actual DITA `<step>` tag. This consistency in structure cannot be achieved by converting plain HTML5 to XML. Figure 4 shows the DITA XML generated from a student project and a PDF transformation of that topic created with the DITA Open Toolkit.

A major limitation of this feasibility study was the small size of the class. However, this was the first-ever hands-on evaluation of Lightweight DITA. Exploratory studies like the one reported in this manuscript are essential as the Lightweight DITA subcommittee continues working on approaches to minimize complexity for authors of a widely used, international, open documentation standard such as DITA. Another limitation is that HDITA is not yet included in the DITA Open Toolkit, and the conceptual model we used in this study did not allow for advanced DITA features like conditional processing and advanced content reuse. However, student projects created in HDITA can be



Figure 4: HDITA topic converted to DITA XML via Jotsom (top) and its PDF transformation (bottom) via the DITA Open Toolkit

transformed to DITA XML and can take advantage of those features.

Although Lightweight DITA does not replace the functionality of DITA XML, an authoring model similar to the one presented in this paper could be beneficial for practitioners currently using DITA or considering adopting the standard. For current users, HDITA provides an easy way to invite collaborators who are not proficient in XML but work in HTML, including Web developers and authors or programmers and application developers. The students who were comfortable writing HTML or who had programming experience quickly embraced the concept of structured authoring with HDITA. For potential DITA adopters, HDITA represents an entry to the standard without specialized tools. Students authored effective HDITA topics in editors ranging from Windows Notepad to Sublime Edit, and the HTML5 foundation allowed instant basic reader view on a Web browser.

Next steps in this work include obtaining and implementing feedback from practitioners and testing HDITA with larger groups, most likely in small companies or non-profits needing documentation. Furthermore, the subcommittee is working on XDITA, a lightweight XML model, and MarkDITA, which generates DITA-like deliverables from content created in Markdown.

Acknowledgements

Carolyn Rude and Russell Willerton provided helpful feedback on drafts of this article. We also acknowledge the contributions of our colleagues from the Lightweight

Structured Authoring without XML

DITA subcommittee at OASIS. The Jekyll template used for the class experiment was based on a DITA Open Toolkit plugin created by Jarno Elovirta and modified by students sponsored by a seed grant from the Virginia Tech Institute for Society, Culture and Environment.

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Manuscript received 21 July 2015, revised 24 August 2015; accepted 10 October 2015.

Tailoring Information and Communication Design to Diverse International and Intercultural Audiences: How Culturally Sensitive ICD Improves Online Market Penetration

By Josephine Walwema, Oakland University

Abstract

Purpose: The chronicle of a global approach to information communication design (ICD) does not always translate when applied to cultures in countries around the world. In this study, I wanted to know if the designers of Souq.com relied solely on the universal principles of ICD to build a uniquely Arabized and successful site. Equally, I wanted to discover what other dimensions are in play when it comes to designing content for target users.

Method: I reviewed the literature and developed a framework based on key indicators of ICD. I then analyzed the layout and Web content of Souq.com by examining interface and content, focusing on the homepage.

Results: The principles of ICD, while foundational, require additional knowledge in order to meet the needs of local users and to build a sense of ownership of those principles. The process of designing for local users can benefit from insider knowledge and singular interpretation of a people's culture, language, and traditions.

Conclusion: ICD is invaluable for the basic framework it offers. However, its principles are in themselves insufficient when it comes to designing not globally but locally.

Key words: information and communication design, technical intercultural communication, cultural sensitivity, *nomos*

Practitioner's take-away:

- Expand applications of information communication design (ICD) based upon sensitive and multiple culture perspectives
- Understand how to leverage multiple user perspectives to create an effective, culturally sensitive, and locally attuned artifact
- Gain an understanding of *nomos* (ways in which culture is revealed by naming or labeling), as it can guide practices of cultivating a sensitive user experience
- Enhance understanding and uses of personas to create more effective materials for international audiences

Introduction

For some technical communicators, information and communication design (ICD), often defined as the art of crafting specific messages to achieve desired goals among target audiences, is seen as an effective way to create materials for international audiences (Harrison, 2014). In essence, ICD attempts to apply theory to the practice of design (Harrison, 2014) while creating novel analytical products such as interfaces, networks, and navigation systems. As such, ICD practices have much to offer technical communicators due to ICD's focus on examining user-interface design in order to understand the relationship between audiences, technologies, and design processes. Current uses of ICD, however, are limited in terms of how effectively they can be used to design materials for international contexts. As a result, technical communicators need to re-think approaches to ICD in order to use ICD more effectively when creating materials for users from other cultures.

This paper examines how the ICD approach can be modified to facilitate the process of creating materials for international users. To examine this issue, the paper presents an analysis of the UAE-based website Souq.com and reviews how the site represents a modified or enhanced approach to using ICD in global contexts. The examination of this topic is guided by the following overarching research question: What are the strategies for intercultural technical communication that Souq.com has adapted and effectively extended to design its user interface?

The objective of the related analysis presented here is to reveal how technical communicators can modify the ICD approach to create more effective materials that meet the needs of different international audiences.

To address these ideas, this paper begins with an overview that contextualizes this particular study within the promise and perils of internationalizing communication design. Next, I present a review of the theoretical framework on culture, examining attendant challenges related to larger concepts of culture and how they influence localization. The related discussion of these perspectives and their implications for intercultural technical communication leads to an analysis of Souq.com, the object of study discussed here. This particular study focuses specifically on the homepage of Souq.com, as Nielsen (2013) has deemed this page the "most valuable real estate in the world" (para 1). As the first

point of contact with the user, the homepage not only gives users information about the products, it provides navigation tools that help users explore the site.

Through such an examination of the Souq.com homepage, this paper reveals how technical communicators can use a modified approach to communication design as a tool for communicating more effectively in international contexts. It concludes with a summary of the lessons learned and the practical implications for internationalizing communication design.

A Review of Central Concepts in Culture and Interface Design

Culture is an important aspect to consider in user interface design, which is the physical point of contact for the provider and users. As Cyr (2008) found, the quality of a user interface affects customer loyalty. Research showing that different cultures perceive visual forms of information such as signage, instructions, and color, differently (e.g., Hembrooke, Gay, Granka, Feusner, & Newman, 2004; Kim, 2013) has led to more culturally focused approaches to designing content (Cyr, Head, and Latios, 2010). Often, these approaches center on using Hofstede's (2011) ideas of cultural dimensions (e.g., power distance, uncertainty avoidance, and individualistic vs. collectivistic cultures) to guide the process of designing interfaces for international audiences (see, for example Würtz, 2006; Khashman & Large, 2012). In fact, so pervasive are Hofstede's ideas that they seem to have created a foundation for much of the research and design work done in intercultural and technical communication (Merkin, 2006; Schafer, 2009). Hofstede's ideas, however, closely associate cultures with nation states and create the misperception that all the individuals in a given country hold the same cultural expectations associated with communication.

Culture and perceptions of user expectations

The problem becomes the notion of culture itself, which is fraught with layers of meaning. Does "culture" refer to a people, a nation, or a country (see Leidner & Kayworth 2006)? What about the different affiliations that members of a local community may subscribe to, identify with, and/or use to separate themselves from the larger community?

While some individuals laud Hofstede's model for generating cultural knowledge, others—such as

How Culturally Sensitive ICD Improves Online Market Penetration

Mushtaha and De Troyer (2012)—argue these ideas cannot account for other (digital) cultural factors. These factors include a users' evolving understanding of the Web and the ease with which individuals interact with Web content over time. Rather, Mushtaha and De Troyer argue that continual interaction with Web-based content—particularly content created by other cultures—gives rise to digital cultures with norms of discourse different from ones typically associated with strictly national cultures, i.e., applicable to an entire nation. In fact, because modern online culture is embedded in the communication process, the Internet is able to accommodate multiple cultures independent of geographic location (Castells, 2011). Thus, the practice of creating online materials for international audiences must account for both:

- The digital culture acquired from the Web
- The social culture inherent in the traditions and identities of the culture(s) in question

The central focus to consider is that not all members of the same national—or even regional—culture represent a unified perspective on communication preferences and expectations—particularly in relation to design. For example, Cyr, Head, and Larios (2010) found that color can prompt certain physiological and psychological reactions among users. Interestingly, Madden, Hewitt, and Roth (2000) found color is not as culture-specific as anecdotal claims have it. Rather, the particular meaning associated with a specific color might be “regional, or unique to a given culture” (p. 102). Thus, while an understanding of culture and color is central to effective international design, it might be that no unified cultural perception of a given color exists. Such association can be key to effective website design—especially if user perception of the effectiveness of the interface is closely associated with the color. Cyr (2008) found that color appeal led to trust, which led to “loyalty” and, eventually, user satisfaction—all essential factors to succeeding in the global online marketplace of today. This factor is important to interface design in global contexts because it is vital to the success of acquiring and retaining patronage in online transactions.

Culture and perspectives of user behavior

User behavior is another feature that technical communicators often focus on in the design of

communication. Such behavior encompasses everything from reading patterns to preferences and performance expectations associated with the user interface. For example, Brumberger (2014) found that high-context cultures rely on implicit meanings inherent within contexts and perceived in relationships (i.e., use the setting in which information is presented to determine what the message is). Thus, “what individuals attend to when looking at visual material appears to be linked to their reliance on context” (p. 103). Users in low-context cultures, on the other hand, pair their preference for clarity with explicitness and their preference for aesthetics with ambiguity—in sum, say what you mean (p. 100). These factors influence design decisions when creating materials—particularly online materials—for individuals in other cultures.

At the same time, such design must also meet user expectations associated with how an interface should be used and, likewise, how that interface should be designed to facilitate that use. To address such factors, Getto and St.Amant (2014) have argued for expanding the concept of developing personas (i.e., archetype or profiles of users) to represent the needs of a whole range of real users that can occur within a given national culture. They advocate developing personas not for an overall cultural group (e.g., the French), but rather to extend persona creation to identify and understand different kinds of users within that greater culture (e.g., teenagers living in urban areas in southern France). Getto and St.Amant concluded that design based on such expanded cultural personas would better meet the needs of the range of users within a given nation.

In terms of extending these ideas to the design of online media, Usunier and Roulin (2010) examined the communication style of content and design on websites created by members of different cultures. They hypothesized that companies that serve specific cultural communities located in designated places (as opposed to one design for the entire region or nation) designed content specific to those local contexts (as opposed to a greater national one). Usunier and Roulin found such sites were designed based not on national-cultural attributes, but on the cultural “frame of reference and the local knowledge found in the in-group” (p. 190). Their finding re-enforced the idea that, even among people of a shared culture, certain segments of a culture (i.e., in-groups) actually set the standard for what is forward thinking and can markedly influence

design expectations in different areas. Thus, effectively designing for such contexts—particularly in terms of online media—becomes a matter of knowing how specific groups of individuals in a given culture use technologies. For this reason, ICD, which focuses on identifying and understanding such interactions, has been seen as a mechanism that can address this topic. While the ICD approach can lead to more successful designs for international users, it still has limitations, as revealed in the review of the literature here. These limitations need to be considered and addressed in the interest of expanding ICD's reach to facilitate effective design for international audiences.

Re-Thinking ICD in International Contexts

Information and communication design (ICD) focuses on helping users make more efficient and effective decisions when using a technology (e.g., an interface). Through what Kostelnick (1995) characterizes as “the overt as well as the hidden aspects, the rational and the irrational, the aesthetic and the pragmatic,” ICD enhances the value of products by enabling users to process their functional and visual aesthetics (p. 182). Central to this approach is recognizing and accounting for user needs and expectations—as well as contexts of use—during the product design and development processes. So powerful are these factors that ICD approaches to design are often considered universal in nature and are seen as an important method for communicating effectively with greater global audiences (Newell & Gregor, 2000; Marcus, 2012). There are, however, numerous contradictions to this perspective.

Universal ICD limitations

Consider this: Google currently controls roughly 83% of the global search market (Bejarano, 2013); however, its reach does not extend to every country. One such country is South Korea. *The Economist* (2009), for example, has documented the struggles Google has faced in South Korea where “Google’s celebrated bare-bones style” (Sang-Hun, 2007, para 23) that relies on algorithms has failed to gain a following. South Koreans have chosen Naver.com for its culture-rich content over Google (Sang-Hun, 2007).

Google’s failure to appeal to South Koreans despite its minimalist approach (favored by Westerners) is demonstrative of a universal approach to design—an

approach in which interfaces are often characterized as “highly simplified abstract generic human forms that carry no suggestions of race or gender” (Brumberger, 2014, p. 92). Algorithms and abstraction as universal representations have, in other words, stripped content of meaning and images of their relationship to reality, respectively, implying that ICD has to be “culturally focused” (Kostelnick, 1995, p. 93).

By contrast, Naver.com, a less globally known search engine local to South Korea, is more popular with Internet users in that nation. Sang-Hun (2007) attributes Naver’s success in South Korea to its ability to encourage a “South Korean inclination to help one another on the Web” (para, 4), while Lee, Kim, and Jeong (2010) credit its popularity to “localized information and interface” (p. 9). Moreover, users in South Korea are said to “prefer portal sites that resemble department stores, filled with eye-catching animation and multiple features” (Sang-Hun, 2007, para. 22). Granted, some of Google’s shortcomings have been attributed to its shortage of “Korean-language data-to-trawl to satisfy South Korean customers” (Lee, as cited in Sung-Hun, 2007). Still given that South Koreans rank Naver above Google gives rise to speculation that Naver’s overall ICD approach including localization and cultural adaptation is at the heart of its appeal to South Koreans. This contrast is a study in ICD, suggesting the need for a more adapted approach that recognizes the interconnection ICD has with cultural and local inclinations.

Adapting ICD

In the Middle East, a similar interplay might explain the success of Souq.com, which, as Scott (2015) reports, has successfully penetrated Arab markets. Souq.com is an online marketing site that specifically targets users from Arab countries. Headquartered in Dubai, United Arab Emirates, Souq.com’s user base is estimated to have risen by 170% between 2014 and 2015 to include some 130 millions users as of December 2014 (Amos, 2014).

Souq.com’s rapid growth coincides with the following developments:

- Its evolution from “auction site” to “marketplace” (CrunchBase) selling over 200,000 products with a network of 75,000 traders (ArabianBusiness)
- Internet penetration in the region estimated between 50% to 75% (United Nations Broadband Commission)

How Culturally Sensitive ICD Improves Online Market Penetration

- Mobile devices (e.g., cell phones) that offer instant Internet access and have “been a huge driver of growth in 2014 approximating 45% of sales (Mouchawar, 2015)

Based on these factors, Souq.com can serve as an example of how ICD principles can be expanded to better address the expectations of different groups of users both around the world and within the same culture.

An Overview of souq.com

Souq.com takes its name from *souq*—a noun that means “open-air marketplace” in Arabic (Merriam-Webster’s online dictionary. See also Carter, Dunston, & Thomas, 2008). *Souq* also generally refers to the transactions and interactions that occur in an open-air marketplace, such as bargaining for commodities between buyers and sellers. By positioning themselves as sellers in a digital/virtual sort of open-air market, the proprietors of Souq.com effectively invite buyers to come bargain with them online. This invitation to bargain represents the first step in leveraging the site designer’s common knowledge with the cultural expectations of Arab users to co-create a shared sense of meaning. It is said that bargaining is inherent to Arab culture (Taylor & Carraher, 2014).

Souq.com’s approach to design through adaptation, localization, and strategies in intercultural technical communication has resulted in a uniquely Arabized ecommerce interface that includes culture-specific features such as the name souq, religious symbols like the minaret, and promotional tactics, such as “White Friday,” the company’s counterpart to Black Friday—a day of shopping and special offers. As Souq.com founder and CEO Ronaldo Mouchawar put it, the biggest challenge was to “Arabize millions of products, product descriptions, [and] build a proper catalogue index” (Amos, 2014, para. 19). What he describes here is, in essence, customizing and, in some ways, branding based on inter-culture and localization, a strategic approach to designing technical communication. Thus, Souq.com represents an application of ICD principles of understanding and meeting the expectations of users in combination with an understanding of the varying expectations of different groups of users within a given culture.

For these reasons, an analysis of Souq.com’s website can provide important and interesting insights in to how technical communicators might merge ICD approaches

with an understanding of group variations within a culture to create more effective online materials (and interfaces) for a wider range of international audiences. This analysis is based on the premise that the limitations of ICD can be enhanced with two emerging modalities: inter-culture and localization.

Method of Analysis

The purpose of the analysis presented here was to determine how ICD approaches could be merged with an understanding of local cultures to create more effective online design for different international audiences. To examine this issue, I sought to answer the overarching research question: What are the strategies Souq.com has used to expand and adapt conventional ICD approaches in order to better address the interface design expectations of different groups of users within the same culture? To begin the process of addressing this question, I first identified the variables (below) I would use to conduct an analysis of the homepage.

Focus of analysis

A review of the literature indicates that successful ICD processes related to designing for international contexts involve an understanding of the role of users in combination with an understanding of both localization and intercultural technical communication theory. The key is for users of the ICD approach to correctly interpret culturally appropriate knowledge associated with the setting in which something is used. Next, they need to understand how the related users create mental models of what constitutes “appropriate use of an interface” in that context.

To examine how such factors come into play with the design of the Souq.com website, I focused my analysis of the homepage by identifying the following issues that were seen as key to successful international design in the literature on the topic. The following three items are the most prevalent items that emerged from this review.

- **ICD:** The applicability of basic principles of information and communication design to localization (Marcus, 2012; Snitker, 2010; Swarts, 2012). For example, these include design elements such as symbols and site features like page layout and visual design.

- **Inter-culture:** The significance of (general) digital-cultural versus (specific) social-cultural elements in localization (Usunier & Roulin, 2010; Castells, 2011; Mushtaha & De Troyer, 2012). For example, digital users expect interfaces that are networked, interactive, and immersive, and offer seamless and intuitive navigation on multiple devices.
- **Localization:** Cultural preferences and how they shape localization approaches to design (Cyr, 2008; Cyr, Head, & Larios, 2010; Scott, 2010). For example, language and content, product or service names, time zones, and currency.

Each factor became a variable I looked for when analyzing how effectively Souq.com created online displays and interfaces for different groups of users within that culture.

Process of analysis

Nielsen's (1995) heuristics have been widely accepted in the analysis of business and commercial websites. Similarly, Pauwels' (2012) multimodal framework is suitable for analyzing websites and encompasses "looking at rather immediately manifest features . . . to more in-depth interpretations of the constituting elements and their intricate relations" (Pauwels, 2012, p.251). These manifest features include

- language, of local users;
- layout, of elements and contextual structure;
- navigation, to help users find their way;
- symbols and imagery;
- branding, including identity; and
- content, an interactive focal point for users and designers.

These features became the primary areas I focused on in my analysis of the Souq.com homepage when reviewing the site in terms of factors of ICD, localization, and inter-culture. The analysis was undertaken at different stages in 2015 (in the period ranging from March 2015 to late July 2015). I selected this particular period to conduct my analysis because it coincided with the time of writing this article.

In presenting the results of my analysis based on the process described here and in lieu of screen captures from the Souq.com website (due to legal constraints), I use detailed descriptions of the website's elements on the homepage that best exemplify the features of my analysis.

Results of Analysis

After reviewing the Souq.com home page in terms of the factors noted here, I found the following patterns or trends in design.

ICD concepts

As noted earlier, ICD operates through a communication process that involves a "negotiation of beliefs and values" (Kelly, 2014, p. 213), so that in online communities, users exercise some agency as "dynamic participants in the argument" (Tyler, 1995, p. 105). To accommodate these basic ICD principles, Souq.com creates an affective user experience by using "natural mapping" (Norman, 2013, p. 23)—or the process of using "physical analogies and cultural standards" (p. 23) that lend immediacy to users' understanding. For example, an Arabic reader's eye will naturally follow a right to left reading pattern; hence, the most important information is placed in the right hand corner. That sense of natural mapping also applies to its naming—souq—and prominently placed Arabic calligraphy. Through this approach, Souq.com is able to better tailor the site to the cultural expectations of these particular users by presenting it as a natural extension of an open-air market common in that culture. In an open-air market, trading is the norm, and Souq.com intimates that possibility by creating a digital context that mirrors the cultural experiences and expectations of those users.

One way in which Souq.com's homepage mirrors such expectations is through the use of the rapid display of a sequence of images that create the illusion of movement. Such motion makes the site appear more interactive in nature (i.e., it is dynamic vs. static) and makes the interface easier to use by providing context to help the user navigate reliably. These contexts begin with parent categories, or menus that incorporate drop-down sub-menus that then lead to specific products such as computers, laptops, tablets, and other products. As such, this dynamic menu feature of the site represents an effective execution of ICD principles because it streamlines navigation by helping users focus their actions. It also makes finding products easy by limiting the paths users can search to find items.

Language use on the Souq.com homepage also represents an effective application of ICD principles in global contexts. A bilingual site, Souq.com presents information in both Arabic and English, yet weaves

How Culturally Sensitive ICD Improves Online Market Penetration

language and content together so that they appear seamless. For example, the homepage presents a simple user interface that contains Arabic text and a relatively simple visual design.

Furthermore, Souq.com's design speaks the users' language with words and concepts familiar in Arabic culture. The page navigation is linear, as seen in some features where users are directed down a path that culminates in a specific product. These features emphasize hierarchical structure by displaying the primary navigation starting point on the homepage. Such design might show order of importance by placing certain items before—or above—others. As Zaharna (1995) explains, graphically clustered, related information and repetition are common rhetorical devices in Arabic culture where they are considered positive.

The interface offers the look and feel of a spatially analogous marketplace augmented by cultural analogies such as

- text flow and direction, in Arabic calligraphy, in vegetal and geometric patterns with visually appealing patterns;
- male and female personas of individuals dressed in fashionable attire, perhaps to welcome both male and female customers; and
- choice of colors and tones such as greens and sky blue that resonate with this culture.

What is striking, from an ICD perspective, is the depiction of personas on that page. Souq.com presents both male and female personas on equal footing. The female persona is presented in a skintight, brightly colored dress. At first glance, her dress and posture appear inconsistent with what many Western viewers might consider an appropriate depiction of women in Arabic culture. Equally interesting is the proximity between male and female personas in the image, particularly in light of the fact that neither of them is conservatively dressed (at least in terms of what many Western audiences might expect). The two figures are literally leaning against one another with the woman's back pressed against that of her male counterpart. At a time when the meaning of Arabic culture is so fraught (as austere and puritanical), such images do not conform to outsiders' expectations of what it means to be male and female in that world.

The image, however, represents a set of attributes that personify a composite of a segment of people in this market versus attempting to create a “universal” or “monolithic”

depiction that attempts to address the expectations of an overall cultural group. It captures that tension between the austere and the opulent in meaningful ways, demonstrating that designing with these personas shows how ICD, in combination with an in-depth knowledge of the various audiences within a given culture, can be used to create online materials that better address the expectations of different groups within an overall culture.

In addition to the images used on the homepage, the visual design featuring simple menus with illuminating content, color combination, and traditional Arabic patterns (i.e., decorative paintings, clothing, and jewelry that convey a sense of opulence and texture) resonates with this category of users. It appeals to Arabic people's love of extravagance and manifestations of wealth (Gannon & Pillai, 2015). This approach to design allows Souq.com to more effectively meet the needs of users through visuals that shape the content through vivid imagery, as seen in the products, and verbosity, as represented by description of these products. Such elements address expectations of abundance that are considered highly important across much of Middle Eastern and North African culture (Zaharna, 1995). As such, these features represent an effective application of ICD principles because they help users understand the intended meaning and they predispose users to accept the message.

On the Souq.com homepage, repetition is applied liberally to different aspects of the site, as seen in the examples of colors, textures, and patterns. Within this particular cultural context, such design features help reinforce the message of consistency. As such, these features represent an effective but expanded application of ICD principles by tapping into the cultural, aesthetic, and even perceptual sensibilities of a people. Thus, the homepage's simple, user-interface design appears to be goal-oriented [i.e., it helps users attain the goal of trust with images prominently displayed to direct the path of male users (as represented by male personas, products) and female users (female personas and respective products) in accordance with the norms of certain audiences within a particular, larger culture]. In this way, accessing information matches the needs of specific groups of users within a culture versus attempting to create an interface that treats all members of a greater culture as a uniform whole.

Inter-culture

As noted earlier, the term “inter-culture” refers to the significance of (general) digital-cultural versus

(specific) social-cultural elements in localization. In terms of website design, analyzing culturally specific design patterns (notably typography, layout and cinematographic images) and decoding them can provide us with a window into the way inter-culture is accommodated effectively in online media. Analyzing the Souq.com homepage during the holy month of Ramadan (generally in June and July) offered an effective example of how digital and social-cultural elements can converge to create effective online materials for certain cultural audiences. [The efficacy of these examples are based on the idea that cultural markers; such as language, symbols, and their design; increase a site's usability and promote user satisfaction and trustworthiness (Fogg et al, 2002)].

The notable characteristics on the homepage are consistent with the expectations of a digital-cultural community. Recognizable brand names, along with text linking to detailed information, are consistent with what Web users on an e-commerce site have (generally) come to expect (Bernard, 2003). While the homepage depicted internationally recognized products such as flat screen TVs, Apple Watch, and kitchen appliances, it did so with Arabic aesthetics. These included bi-directional reading, calligraphic text, culturally preferred colors (green against a blue background), orthographic patterns requiring visual processing, and explicit references to Ramadan, rendering the content uniquely Arabic. These digital and social-cultural images were hybrids that assimilate elements of Internet and local Arab culture. The designed Arabic text juxtaposed with products shows attention to cultural sensitivity, while the white space helps users segregate features on the page to eliminate crowding.

Incorporating elements that imply a social-cultural twist on Souq.com infuse the digital with a distinctly Arabic identity as if to defy homogenization/universality. They do so by capitalizing on rituals related to the season of Ramadan such as fasting and breaking the fast (a custom known as *Iftar*). *Iftar* signifies not just breaking the fast but also renewal.

The scant text is augmented by visual design in the form of images, signs, symbols, and metaphors that appeal to users' logic and emotions and lend credibility to the site as Würtz (2005) has shown. This scant use of text is an element of proxemics in which space as a "specialized elaboration of culture" is prized in Arab cultures (Gannon & Pillai, 2015, p. 66). Proxemics (i.e., the use of space, both physical and personal) speaks

here to Arab cultures' desire for expansiveness and open spaces. The non-verbal elements in these images are sites of interaction that rely on connotation and association to convey meaning rooted in shared values. Such meanings are bound up in cultural imperatives and agreed upon norms.

Souq.com recognizes that many if its customers are Arab but also Muslim. So designs that address Muslim factors can appeal to this category of users in the Middle East. Consider Ramadan, the ninth month of the Islamic lunar calendar, a time considered particularly holy in the Muslim faith. Ramadan is a spiritual and celebratory period during which practicing Muslims fast from dusk to dawn. During this period, residents in Muslim countries live a more leisurely existence given the rigors of maintaining a fast [in countries such as the UAE, Saudi Arabia, and Qatar, the governments enforce a policy of employees working only six hours per day to accommodate the rituals of Ramadan (ArabianBusiness, 2015)]. The month of Ramadan culminates in celebrations that mark the end of the fast on a day known as Eid al-Fitr. During this period, retailers ratchet up their marketing just like they do between Thanksgiving and Christmas in the US. And so Souq.com leverages this knowledge of Ramadan to intertwine meaning and context, instantly creating identification with the users. By using terms that signify insider knowledge, such as "blessed Ramadan" and "Iftar deals" (i.e., the meal that breaks the daily Ramadan fast after sunset), Souq.com creates a sense of shared attributes.

Souq.com capitalizes on the immediacy of the season and the tacit implication that the season culminates in celebratory extravagance for which consumers need to prepare. Souq.com thus forms association between itself, the season, and the need for prospective customers to celebrate.

This use of topical knowledge of the spirit of Ramadan reflects Miller's (1979) observation that effective communication takes into account the "concepts, values, traditions, and style, which permit identification with the community" (p. 617). Souq.com does this by designing an interface that appeals to Arabization aesthetics. Shabout (2015) notes that this fusion of Islam and Arabic culture arises from the "tendency among Arabs to view their cultures and subcultures as a coherent entity—the Arab culture" (p. xiv).

While ICD principles discuss the role of language in relation to translation, they do not address the

How Culturally Sensitive ICD Improves Online Market Penetration

relationship between language and culture. For example, Whorf (1956) offers that culture and language are not separable and that culture, through language, influences people's thinking (see also Kramsch, 1993). Souq.com, however, capitalizes on this understanding of language and culture through the site navigation scheme, its selection of metaphors, and visual appearance.

These language-focused navigation schemes begin with the navigation bar located at the top right on the homepage (unlike top left in the West) to conform to the reading direction of Arabic language, which is from right to left. Souq.com identifies the focal element on the right-hand side of the website where users' eyes will be drawn first and then strategically creates context surrounding that focal point to maximize tracking the direction of the readers' eyes (Nisbett, 2003; Röse, 2005). The metaphors are embedded in the Arabic language with words, phrases, and concepts familiar to these users. Take Iftar, for example, the meal eaten at sunset during Ramadan. Souq.com heralds Iftar prominently on the website by advertising sales, and promoting products associated with the season like dates, beads, and incense and creating an festive ambience as if to mitigate the effects of an all-day fast. The inherent message appears to be a pep talk intended to encourage those fasting that the time to break the fast is at hand and, it could also be a time to celebrate with a purchase. Reference to Iftar conveys familiarity. It communicates acquiescence, attracts attention, and actively engages the traditions of its patrons.

The Islamic religious tone of the site allows Souq.com to connect with users at a visceral level. Luxurious goods—such as Apple watches, Bulgari watches, perfume, and beauty products—under the banner of *Amazing Ramadan Offers*—suggest that one can be luxurious and religious. The juxtaposition between font sizes offers visual cues and generates a pensive Ramadan mood that interpellates (i.e., targets pre-defined individuals to act as intended) users in relation to the site's offerings. The blue color of the homepage signifies a safe, secure environment, and with it, a sense of social presence rooted in a shared language that motivates users' positive associations with, and perhaps a sense of ownership of, the site. Both the tone and the language are pivotal to engendering trust and validating Arabic users' presence on the site and their interaction with its interface. Evoking the language and rituals of Ramadan on the homepage communicates to users a sense of shared understanding. The result is an interface that recognizes

social-cultural traits that fit within the larger schema of digital-cultural parameters that suit Arabic users.

Inter-culture as an element of design highlights the important, and even unexpected, ways that intercultural considerations influence the design of international websites. It expands and improves the use of ICD when creating materials for international audiences by requiring designers to recognize and convey them through their local websites' inter-culture norms.

Localization

Cultural preferences and how they shape localization approaches to Souq.com's design are steeped in genre, which Miller (1984) has argued embodies what is rational to the genre's culture. Genres, Miller offers, are defined by, among other things, recurrence of social actions, for they serve as "keys to understanding how to participate in the actions of a community" (p. 165). By incorporating "knowledge of the aesthetics, economics, politics, [and] religious beliefs" (p.159) of the Arabic community it serves, Souq.com demonstrates effective localization. Such knowledge, which is a result of cultural understanding, goes beyond ICD features and principles.

Take, for example, the way Souq.com uses an internationally recognized icon like the VISA card, which it localizes through a promotional offer. For a maximum of 100 SAR, a buyer could obtain a 10% discount for using a VISA card. That's not all, however. Localization of the VISA card recognizes that a global brand can benefit from some culture-specific customization. Thus, Souq.com creatively incorporates local vocabulary markers such as subdued colors, honoring Ramadan, and watermarks showing images of the distinctive architectural feature of minarets (symbols of Islamic civilization) above the skyline of a major Middle Eastern city, all of which become visual cues/focal points for a Muslim community.

By incorporating these markers, Souq.com embeds a lot of meaning and detail in the interface so that users can read into both the context (Ramadan) and the object (VISA) to enter into a transaction steeped in cultural knowledge (Zaharna, 1995). This context involves cognitive and emotional responses in which users develop a relationship with the message and its source. And it ultimately has a bearing on its interpretation.

Souq.com also recognizes the communication nature of Arab cultures as being more ambiguous and indirect than their Western counterparts. Thus, unlike Amazon's

more direct approach of personalizing products based on users' browsing/shopping history, Souq.com seeks to evoke an affective response from its users by designing more for "emotional resonance" (Zaharna, 1995, p. 243), a strategy that helps promote social relationship. Souq.com's emotional resonance is created in the interface aesthetics that incorporate beauty and various luxuries (e.g., designer fragrances, handbags, and expensive watches) and traditional cues, personas and religious icons.

One reason for this resonance may be because beyond the utility of the website, perceived beauty elicits high emotional response among users (Cyr, 2013). Moreover, being tuned into the seasons throughout the year resonates a lot with users as it demonstrates sensitivity to their needs. For example, July was heavy on Ramadan, but that season has now passed. And with that passing, Souq.com has unveiled more germane products such as baby products and designer wear. Such resonance in time builds and leads to e-loyalty, a much sought-after quality in online marketing (Cyr, Hassanein, Head, & Ivanov, 2007).

One of the overt moves Souq.com made was to re-brand and re-name the concept of Black Friday, a celebrated shopping holiday in the United States but which has no resonance in the Middle East. In the Arab world, Friday is a day of prayer. Like Sundays in the Western world, Friday is a day off on which people gather to worship. As Souq.com put it, "surely . . . Our Friday is WHITE" (<http://uae.souq.com/ae-en/white-friday/c/>). White, from a cultural perspective, is better by association with a day of prayer when worshipers dress in white. White is a symbol of purity and peace. That symbolism engenders identification with and shows sensitivity to Arab users. Such branding is characteristic of the way information salience shifts with intent and with consideration of the times. For example, when Souq.com evolved from an auction site to a retail portal and marketplace for third-party sellers, it expanded both its product and user base substantively (Attwood, 2014).

Summary of findings

The analysis of the Souq.com website as presented here reveals how ICD can be enhanced by, among other aspects,

- genre,
- aesthetics,
- branding, and
- the communication patterns of local cultures.

Genre knowledge goes a step beyond utilitarian models of design to serve a social purpose indicative of conventional norms within a given community of users. ICD needs to recognize genre knowledge and to reflect it in the communication patterns of the target culture. Where a culture is more ambiguous, the content ought to show sensitivity to that ambiguity. When it comes to branding, that knowledge (of genre and communication patterns) leads to decisions regarding product promotions, placement, and marketing. And ICD, enhanced with this knowledge, can appeal to the affect of users through aesthetics and related decorative motifs, for example.

Consider language as being central to a people's culture. Using language as a starting place, ICD can first and foremost assure that the website is accessible in the language of intended users. For example, for the estimated six billion Arabic speakers in the world, there is currently only 3% Arabic content (Africa-ME, 2015). This gap likely applies to many more languages and it can begin to be addressed by ICD in target countries by investing in developing content in those local languages. Moreover, language as a starting place can shape the design and layout, page orientation, placement, and navigation tools. Additionally, symbols of the local currency speak to discerning users who begin to view the content through their prism. This integration of cultural communication patterns can also find its way into branding, which Souq.com has accomplished by increasing Arabic content, localizing promotions, and even catering to the limited availability of credit card holders by making it possible for online purchases to be paid for by cash on delivery. Lately, Souq.com has expanded purchasing options by offering pre-paid cards that can be procured and used online (Africa-ME, 2015).

Implications

What can exploring "Arabization" through the lens of Souq.com teach us about inter-culture and localization? How do these findings enhance ICD approaches to make them better address the needs of audiences from different cultures? Existing ICD schemas (i.e., models of how members of a culture organize information) are a good starting place, organizationally and functionally. However, as Souq.com's success in meeting the needs of over 100 million users in the Arab world demonstrates, more is required (Amos, 2014).

How Culturally Sensitive ICD Improves Online Market Penetration

Nomos

Take the name Souq.com; it teleports the idea that the site owners are working from the same Arabized ideals—validated and recognized by this primary audience. Rhetoricians would categorize this strategy as *nomos*—which speaks to the norms and culture of a people (Farrell, 1995, p. 52). Culture establishes the expectations to which people are socialized, and those expectations then become norms that moderate their aspirations and mediate expectations. Because *nomos* speaks to socially (and digitally) derived customs and conventions agreed upon by a people, understanding of *nomos*, as relative to the context, to a culture, and the situations under which people engage in transactions, enhances ICD. Moreover, because *nomos* also means “name,” the idea of naming, labeling, and other epistemological pursuits can be incorporated in the branding and localization efforts.

The name Souq also expresses elements of insider knowledge and excludes the linguistically unaware. It conveys a sense of nationalism by distinguishing Arabic speakers who intuit the meaning of the word. As noted, souq is an Arabic word for marketplace. A “souq” does for Arab culture what the “mall” does for American culture. The meaning and symbolism in both retail environments, in a way, serve as extensions of the cultures and lifestyles of the people. Both malls and souqs represent places of convergence for personal fulfillment and national identity. From the analytical framework in which *nomos* works to intuit language as both a communicative and social tool that makes branding possible, the souq’s function is not simply to convey information, but to build community and to, in the long run, build customer loyalty.

Personas

The personas’ significant distinction is that they are recognizably Arabic. Because they reflect the expectations the target culture has for certain kinds of individuals, the use of such personas on the Souq.com site taps into the implicit thinking patterns of how users actualize their experiences, leading to trust and acceptance. Moreover, there is an equal representation of gender as evidenced by the presence of both male and female personas on the Souq.com home page—a design feature that bridges the male-female cultural dimension. Assuming homogeneity in nation cultures rather than focusing on subcultures, as the West is wont to, would

handicap design approaches to this category of users by, for example, assuming conservative clothing or even inequality in gender. Singh and Pereira (2005) examine this issue of cultural customization as a means of not just design but of branding. Branding, with its emphasis on a “customized and dynamic marketing strategy” (p.3) seems to be key for Souq.com’s success.

Home page interface design

The Souq.com homepage interface shows simple menus and fewer links that then open up to long scrolling pages as the main method of navigation. This preference for scrolling over clicking works by introducing products seamlessly and endlessly. It might also reflect the essence of souqs—Arab markets—as sellers’ markets (rather than buyers’ markets) where availability of products is emphasized over urging consumers to purchase (like Amazon does) (Al-Olayan & Karande, 2000, p. 71). This kind of design leads to users discovering products without the pressure of committing to purchase items—a factor that gives users control of the purchasing process.

In opting for this approach, Souq.com deploys a design strategy in user experience in which individuals are unknowingly guided through a predetermined narrative that implies an endless possibility of goods and services characteristic of a souq—an open-air marketplace. Given the smartphone-driven nature of its users (Nagraj, 2014), scrolling is a mobile and touch-phone friendly feature that gives Souq.com the impression of never-ending media feeds akin to those found on many social networking sites. Known as parallax scrolling, this successful strategy by Souq.com lies not in basic ICD and individual communication artifacts but in the “ecologies of text that comprise all the artifacts,” as Spinuzzi (2012, p. 10) would argue. And it is emblematic of inter-culture as described earlier, a quality appreciated by digital cultural users.

Context

Context is important to effective design, and ICD, in turn, should strive to embed context around the focal area to carefully add details that enhance meaning. Contextual awareness is generated not just by information but also by environmental and social aspects (Albers, 2009; Schriver, 2007). Context also encompasses history (Snitker, 2010). Thus, while technical communication aims to capture user information, usability alone cannot offer needed insights

into users' relationship with products. This limitation is due to the fact that usability is not always representative of the real-life scenario. Moreover, usability is largely qualitative. Context can help close these gaps by bringing the context and the experience together. The theoretical construct of user experience design should assure that users are not added after the fact but are integral to the design process from the outset.

Cultural dimensions

Even with the cultural dimensions derived from Hofstede's (2001) and Hall's (1990) models, as well as from principles of ICD, it is important to recognize the limitations offered by each through examining the dynamic between the global (universal) and the local. Further, there is a need to recognize the limitations afforded by the word culture, which is often conflated with nation-states, regions, and even religions. Because these are not interchangeable concepts, ICD needs to recognize other dimensions when it comes to designing for human beings. These dimensions include subgroups, social status, exposure to the Internet, and knowledge accrued from interacting with Web tools and with other Web users. By seeing the homepage through the cultural and local users' perspectives, Souq.com has complicated the universal principles of ICD by interpreting Arabesque and local cultural forms to project a distinct yet familiar interface for its intended users.

Conclusion

This paper examined Souq.com, the largest e-commerce website in the UAE, and a site that represents an example of effective user interface design that has successfully attracted and retained the loyalty of customers across the region. The findings presented in this paper indicate that ICD alone is insufficient for meeting design expectations when it comes to creating online materials for international audiences—particularly for specific audiences in certain cultures or international contexts. Rather, ICD needs to be enhanced by integrating the use of inter-culture and localization into overall design approaches.

Within inter-culture, a culturally sensitive approach comprehends culture as socially constructed and even evanescent. As such, an inter-culture approach recognizes that there are no fixed cultures per se in this digital era, as cultures form and reform according to the

contexts in which people find themselves. This is because while culture is particular to situations and unique to settings, it can also be temporal and interactive in nature. Thus, to create materials for international audiences, designers must account for both the digital-culture acquired from the Web and the social-culture inherent in the traditions and identities of the culture(s) in question.

Furthermore, localization can be achieved through natural mapping to help anticipate user behavior and the implicit meanings inherent within contexts and perceived relationships in which decisions are made. Localization can be achieved through pairing cultural, aesthetic, and even perceptual sensibilities of a people in designing a navigation scheme that seamlessly reflects user expectations.

For ICD to invent communication applicable to local situations, elements (words, shapes) and structures (genres) have to generate “relevant and meaningful ambient information” (McNely, 2012, p. 27) that is contextualized and situated. Until relatively recently, designing user interfaces for international audiences has been approached as an add-on process where the existing design is modified so that the visible aspects of the interface appear local.

In the context of global communication, where technology makes such adaptation possible, that approach, while convenient, does not translate into successful communication design. As this paper shows, effective communication design requires participatory engagement with individuals in local cultures and nations from the ground up (Longo, 1998; Sun, 2006; Scott, 2010). Such recognition will result in user interfaces that exemplify a sensitive approach to internationalizing ICD. Future research is needed to enable practitioners to understand how cultural knowledge can be translated into customized and dynamic design strategies in local contexts.

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Manuscript received 15 April 2015, revised 22 October 2015; accepted 30 November 2015.

Review of Two Books on Presentation Style

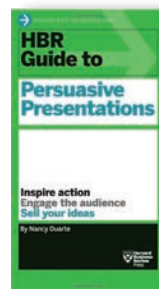
By Caroline Bruno

Introduction

HBR Guide to Persuasive Presentations is not the average, run-of-the-mill text on PowerPoint. Atypical with sophisticated approaches, this book appeals to any high-powered executive leader looking to deliver an impactful message and to transform thinking. The book is filled with intelligent material that transcends media presentations. Audience members are exalted as key benefactors while the presenter is effectively tutored on how to surpass audience expectations on content and delivery. Document designers, professional writers, and other communications professionals will also benefit from Duarte's strategies on persuasion. The potential outcome of lessons learned and applied will likely influence audience responsiveness and decision-making. This book offers leading-edge acumen for the savvy corporate executive looking to establish credibility and reverence as a presenter.

Clapp and Southard are a formidable team, providing an anchor for those looking to accelerate their skills at presenting in professional settings. The content is all-encompassing, letting novices gain confidence, while simultaneously offering ample lessons for advanced speakers who can benefit by expanding their communications repertoire. Unique concepts that benchmark best practices are stylishly introduced. Exercises and activities highlight the workbook feature with hands-on and practical learning. In today's business environment, being able to offer new and relevant skills that impact business outcomes is a plus. *Presenting at Work* departs from speaking expectations in formal situations to social and networking events, which is an added bonus for those wishing to come full circle with public speaking expertise. This book is an easy referral and makes a useful desktop manual.

HBR Guide to Persuasive Presentations: Inspire Action. Engage the Audience. Sell Your Ideas.



Duarte's book is for people who are looking to develop exceptional, persuasive presentation skills in a business setting. Concepts are broadly applicable to several industries and professions, and across various levels of expertise—line manager to C-suite executive. Duarte opines on how a presenter can develop the ability to inspire action, engage the audience, and sell ideas—fundamental to professional development and career progression. Placing a “What You’ll Learn” section up front informs readers on how they might be transformed into a better presenter.

From the onset, the writing is credible. Real-world scenarios, examples, and explanations create a convincing, impactful connection with the reader. The use of analogies, including cultural iconography, allows the reader to immediately resonate with ideas. Duarte goes beyond lecturing on a seemingly overly discussed topic by developing the presenter into an expert on presentation ideas, needs, and content. She offers a number of substantive roles the presenter has apart from merely presenting—one role being “curator of content.” The book gives authority to the presenter while extolling audience power. It develops the presenter into creator and facilitator of success and results. Duarte exceeds proven presentation approaches that exalt audience power—WIIFM (what’s in it for me)—for audience buy-in by considering the audience as key benefactor. The description of the audience as the “hero” who propels the presenter’s idea is a welcomed and novel idea.

In discussing audience segmentation, Duarte stretches the audience profile by asking what keeps them up at night. She presents audience segmentation as a

Review of Two Books on Presentation Style

key approach to building a persuasive presentation that makes respectable business sense. Duarte discusses how the presenter as a change agent can move the audience through a transformation map that addresses the “what” and “how” of change. Key to finding common ground with the audience is resonance—a physics phenomenon—which Duarte instructs should be tapped into for believability.

Whenever writers make an ode to architects of well-established schools of thought, they promote credibility. Duarte does so by addressing emotional and analytical appeals—Aristotle’s rhetorical appeals. She reminds us of the basics of professional writing, including word choice, avoiding jargon, and promoting clarity.

Duarte introduces storytelling principles with presentation structure—done in a tasteful manner and appropriately positioned after the analysis on thought organization. She discusses crafting the beginning, developing the middle, and making the ending powerful with use of the persuasive story pattern—what is, what could be; what is, what could be; new bliss and call to action. Her advice to presenters to leverage an inventory of personal experiences for developing a repository for use in presentations is brilliant and superb; outside the box.

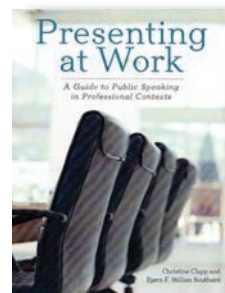
Other revolutionary concepts shared in *HBR Guide to Persuasive Presentations* include persuading beyond the stage. Here, Duarte discusses how the presentation starts the moment the speaker commits to speak and continues after the talk and through follow-up with the audience. She recommends sharing the stage by inviting a co-presenter to increase audience engagement and add diversity of data formats on stage. Duarte also instructs on the three-second glance test where presenters need to avoid taxing the audience’s cognitive resources. Another well-received concept is having more than one version of the presentation.

Graphics are placed throughout the text and complement the narrative in tasteful ways. This accentuates Duarte’s attempt at having the presenter think like a designer by using design principles like CRAP (Contrast, Repetition, Alignment, and Proximity) in creating visuals and building the presentation. Additional takeaways center on being in tune with self (personality), paying homage to Susan Cain, American writer and lecturer; physicality beliefs; passion; leveraging support from teams to maximize

presentation outcomes; and inviting feedback from multimedia for further professional development.

HBR Guide to Persuasive Presentations offers a listing of other literature in the HBR Guides Series and HBR’s 10 Must Reads Series and is a must-read for anyone looking to transform his or her presentation skills.

Presenting at Work: A Guide to Public Speaking in Professional Contexts



This book focuses the reader on public speaking in professional contexts. It is useful for those seeking to improve how they express themselves effectively in business meetings, conferences, job interviews, evaluations, performance appraisals, and networking and social events. It

distances itself from other books on public speaking by including guidance for speaking at events such as toasts.

Three distinct sections of *Presenting at Work* address the how, what, and where of public speaking. Activities and exercises follow every chapter, which classifies the book as a handbook. In it, Clapp and Southard effectively prepare the reader and speaker by opening with a discussion on the psychological preparations and intelligence of speaking. They address how to manage nervousness in a common-sense way—sharing statistics that show nervousness is a universal experience many have. The topic’s discourse feels like a workout in itself as it touches on physical and mental exercises that can channel nervous energy into enthusiasm and success. They mention that including effective public speaking in a communications repertoire is a winning formula for those engaged in communications.

The speaking proficiencies that Clapp and Southard offer are detailed accounts of how to speak, focusing on posture, tone, and connecting with the audience. The language is successful in cautioning the reader about do’s and don’ts. The authors share accounts of well-known leaders’ experiences to demonstrate how poor speaking proficiencies can bring career opportunities, including political office, to a screeching halt.

Discussing the ethics of what is said is a winning approach to engaging the reader beyond speaking basics. Vigilantly respecting the message, audience and

self/presenter are offered as ways to boost integrity and credibility.

Clapp and Southard's conversational tone makes understanding the concepts easy. Use of the unique Sandwich Structure in outlining speeches, analysis of the situation and audience, and even research in preparing for the speaking engagement are dealt with in an instructional manner. They provide clear direction on how to build content, where to go, and what to look for in supporting material and sources of information. It mimics academic applications.

The authors' knack in addressing the obvious does not over-simplify the text. Each area or sub-topic is given due attention, providing supporting detail in an efficient, logical way. For example, topic selection invites the speaker to choose from personal and professional experiences where possible, to add credibility to the delivery—something no other speaker can do on his or her topic. In addressing how to appease the audience, Clapp and Southard share a unique strategy for storytelling: how to deliver the speech based on a ratio between the primary and secondary purpose of the message. They opine on audience engagement, on incorporating live participation during the delivery, and on how Monroe's Motivated Sequence can be leveraged for maximum effect.

Presenting at Work also covers the intricacies and nuances around presenting in various forums—teleconferences, videoconferences, Webinars, panel discussions and group presentations—educating the

reader on expectations in each forum. The authors push the envelope and include Q&As as opportunities to make effective representation as a speaker.

One of the best features in *Presenting at Work* is the placement in each chapter of exercises and activities that enhance the speaker's capabilities. Appendices list useful resources the speaker can leverage for professional development.

References

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- Clapp, Christine, and Bjorn F. Stillion Southard. 2014. *Present at Work: A Guide to Public Speaking in Professional Contexts*. San Bernardino, CA: Spoken with Authority. [ISBN 978-0-578-14435-1. 264 pages. US\$19.95 (softcover).

About the Author

Caroline Bruno is an STC student member. She handles corporate communications for C-suite executives at a Fortune 50 company in New York. Caroline has a careful eye for editorial detail in text and visual content with a honed eye for audience, context, and purpose issues.

Review of Two Books on Presentation Style

Table 1: Books on Presentations Compared

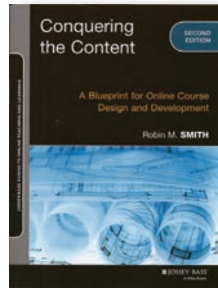
	HBR Guide to Persuasive Presentations	Presenting at Work: A Guide to Public Speaking in Professional Contexts
Audience	<ul style="list-style-type: none"> • Advanced • Several examples spotlight executive team members • Concepts better align to the roles, responsibilities, and experiences of C-suite executives • Level of required actions fall within the portfolio of accomplished professionals 	<ul style="list-style-type: none"> • Intermediate • References college students in multiple instances
Major Strengths	<ul style="list-style-type: none"> • Subject is clearly discussed so that readers can follow the writer's thoughts • Contains visual appeal with a variety of presentation options: pictures, bullet points, graphs, tables, and effective white space • Topic discussed in depth demonstrating great specialization and expertise • Style is formal, set to mimic a corporate setting (considers targeted audience) • Aims at developing the presenter into a super expert with progressive and sophisticated contexts and content 	<ul style="list-style-type: none"> • Clarity with use of conversational tone is appealing • Format including activities and exercises allows readers to practice and develop skills • Large print is helpful and improves readability • Real-world examples bring the learning to life—resonates easily
Major Weaknesses	Is limited in practical examples and experiences junior or middle managers can leverage	Basic examples appeared elementary and may not appeal to more sophisticated audiences
Comments	This is a delightful read, written by a communications professional with revered credentials. Harvard Business Review as a publisher endorses the author's authority and credibility. The overarching theme, the content, and the approach deliver on developing exceptional expertise in presenting.	This is an easy read doubling as a handbook with useful benefits. Sections can be read separately as content and context seem to be structured as both transitional and standalone topics. The speaker is well informed.
Rating (5-star scale)	4.9	4
Cost (USD)	\$19.95	\$19.95

Books Reviewed in This Issue

Conquering the Content: A Blueprint for Online Course Design and Development, 2nd ed.	58	How to Write Perfect Press Releases: Grow Your Business with Free Media Coverage	68
Robin M. Smith		Steven Lewis	
Type Rules! The Designer's Guide to Professional Typography, 4th ed.	58	Author Experience: Bridging the Gap between People and Technology in Content Management	69
Ilene Strizver		Rick Yagodich	
Managing Chaos: Digital Governance by Design	59	The Principles of Beautiful Web Design	69
Lisa Welchman		Jason Beaird and James George	
Developing Quality Technical Information: A Handbook for Writers and Editors, 3rd ed.	60	Enterprise Content Strategy: A Project Guide	70
Michelle Carey et al.		Kevin P. Nichols	
Guide to Research Projects for Engineering Students: Planning, Writing, and Presenting	61	A Companion to Translation Studies	71
Eng-Choon Leong, Carmel Lee-Hsia Heah, and Kenneth Keng Wee Ong		Sandra Bermann and Catherine Porter, eds.	
Get to the Point: Trimming Unnecessary Words (Beyond the Style Manual Book 2)	62	WordPress for Dummies, 7th ed.	72
Stefanie Spangler Buswell		Lisa Sabin-Wilson	
How to Write Brilliant Business Blogs: The No-bullsh*t Guide to Writing Blogs that Boost Your Brand, Business and Customer Loyalty	62	The Presentation Lab: Learn the Formula Behind Powerful Presentations	73
Suzan St Maur		Simon Morton	
Ethical Issues in Science Communication: A Theory Based Approach (Proceedings of the Iowa State University Summer Symposia on Science Communication)	63	Language, Cognition, and Human Nature: Selected Articles	73
Jean Goodwin, Michael F. Dahlstrom, and Susanna Priest, eds.		Steven Pinker	
Sharing Our Intellectual Traces: Narrative Reflections from Administrators of Professional, Technical, and Scientific Communication Programs	64	Medical Monopoly: Intellectual Property and the Origins of the Modern Pharmaceutical Industry	74
Tracy Bridgeford, Karla Saari Kitalong, and Bill Williamson, eds.		Joseph M. Gabriel	
MadCap Flare V11 Developer's Guide: Learn How to Use Flare like a Pro and Prepare to be Certified MAD for Flare	65	Business Matters: A Freelancer's Guide to Business Success in Any Economy	75
Scott DeLoach		Elizabeth Frick	
The Book In A Box Method: The New Way to Quickly and Easily Write Your Book (Even If You're Not A Writer)	66	The 27 Challenges Managers Face: Step-by-Step Solutions to (Nearly) All of Your Management Problems	76
Max Tucker and Zach Obront		Bruce Tulgan	
Technical Writing Process: The Simple, Five-Step Guide that Anyone Can Use to Create Technical Documents such as User Guides, Manuals, and Procedures	66	Introducing Language in Use: A Coursebook, 2nd ed.	76
Kieran Morgan		Andrew John Merrison, Aileen Bloomer, Patrick Griffiths, and Christopher J. Hall	
The Sceptical Optimist: Why Technology Isn't the Answer to Everything	67	Twentieth Century Type and Beyond	77
Nicholas Agar		Lewis Blackwell	
		The Evolution of Type: A Graphic Guide to 100 Landmark Typefaces Examining Letters from Metal Type to Open Type	78
		Tony Seddon	
		New Information and Communication Technologies for Knowledge Management in Organizations	79
		Daniel Palacios-Marqués, Domingo Ribeiro Soriano, and Kun-Huang Huarng, eds.	

Conquering the Content: A Blueprint for Online Course Design and Development

Robin M. Smith. 2014. 2nd ed. San Francisco, CA: Jossey-Bass. [ISBN 978-1-118-71708-0. 194 pages, including index. US \$30.55 (softcover).]



Everyone knows they're different. The question is, how different? And in what ways? And what are the effects of those differences on the audience? And what can we learn from those differences—for our own work?

Smith raises these questions in *Conquering the Content: A*

Blueprint for Online Course Design and Development, as she compares face-to-face teaching with online teaching (OLT) and how one can morph slowly into the other. She also teases out implications of OLT for textbooks. So whether we're involved in teaching, writing textbooks, or both, there are things to be learned.

There usually lurk a few big questions beneath the surface of every book. There are three questions in Smith's book: How does OLT differ from lecturing? What can we learn from OLT for the textbooks we write? What can the audience get from us that they can't get from other sources (a book, an article, another teacher, or our books)? She sprinkles her answers throughout the book.

Replies to the first two big questions are often more a matter of degree. OLT (a) allows more ways of presenting the material, especially more multimedia and visuals; (b) requires more feedback along the way; (c) has shorter segments and a greater need for chunking; (d) has a need for stronger transitions; (e) has more student-student interaction and activities; (f) has a greater dependence on links to written sources; and, finally, (g) has repeatability: provisions for repeating and reviewing material without the need to sift through the whole presentation.

Big question 3 is provocative, introspective, and worth thinking about. Our unique contributions include verbalizing our thinking process for students—how we process information, organize things, solve problems in special ways, incorporate relevant personal experiences, and use certain tricks for remembering things.

Other smaller, but no-less-important, topics include discussions on what are the best media for presenting different kinds of information between audio (live

lecture, a recording, and music), video (still or motion), and print.

Smith also stresses the importance of navigation tools and the need to keep your navigating system consistent so that learners don't have to spend their time navigating. One aid is what she calls Content Maps: a diagram at the beginning of each major section that connects the topic to the rest of the course or the book.

As a means of enhancing the relationship between teacher and student, Smith includes her email address in the book. This seems to me an excellent idea, though you might want to use a separate dedicated address for such things. Another useful element is leaving a blank page at the end of major sections with a few at the end of the book for taking notes.

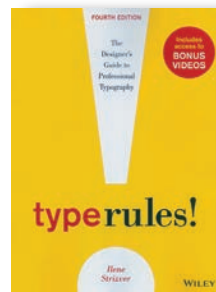
Conquering the Content makes for good reading with lots of useful information.

Steven Darian

Steven Darian is an STC Fellow, having retired from teaching business and technical writing at Rutgers for 33 years and in eight countries. He was a manager for Raytheon in Saudi Arabia. Steven's next book is "Tools of the Trade: Technique in Nonfiction, 2015."

Type Rules! The Designer's Guide to Professional Typography

Ilene Strizver. 2013. 4th ed. Hoboken, NJ: John Wiley & Sons, Inc. [ISBN 978-1-118-45405-3. 308 pages, including index. US\$55.00 (softcover).]



Type Rules! The Designer's Guide to Professional Typography is an excellent introduction for using type to create professional-looking documents. It is practical without being academic or pedantic for graphic designers as well as technical communicators. Strizver's conversational writing style makes

learning about type and its nuances appealing.

The first chapter, "A Brief History of Type," shows examples of historic type designers so we can immediately relate them to currently used types. The exercises at the end of this chapter and all the chapters are created by many people, adding to the book's

breadth and depth. The steps are carefully explained and several examples of solutions to each exercise are shown. Many exercises are to be done in InDesign, Illustrator, and other packages other than Word, yet readers can adapt them and still find them useful.

Discussing font technology in the second chapter, “From Metal to Mac: Understanding Font Technology,” clarifies font formats and management utilities. Arranging it first is more intuitive than arranging it later as added technical information.

The beauty of chapters three and four, “What Makes a Typeface Look the Way It Does?” and “Selecting the Right Type for the Job,” respectively, is the number of examples of good and bad use of type for text. There are also examples in stunning, full-color graphic design posters and announcements. Strizver thoughtfully constructs the pages so examples are in the same eye-view of the text.

Once you are comfortable with basics, you can move to chapters five through ten to learn ways to make type readable. “Formatting Your Type” covers line length and spacing, alignment, and paragraph separators. “Typographic Hierarchy and Emphasis” shows just that. “Fine-Tuning and Tweaking Your Type” shows punctuation, visual alignment, and rags. Chapter 8 is “Spacing Considerations.” “Finessing Your Type” shows special characters, such as small caps and initial caps, and ends with special characters. Chapter 10 is “Figures, Fractions, Signs, Symbols, and Dingbats.” Having these in separate chapters is good for reference.

Chapter 11, “Type of the Web (and Other Digital Formats),” has extensive examples and exercises. Chapter 12, “Type in Motion,” moves into how to animate type, a logical digital type extension.

Finally, Strizver explains in “Designing Your Own Typeface” where to begin in this complex process.

Throughout *Type Rules!* she includes Tips and “Do’s and Don’ts” that are extremely useful and likely to be bookmarked. The appendices, glossary, and index are valuable and complete. Wiley includes online videos that you can access via an access code included in the book. My only criticism is the publisher’s choice of heavy, clay-based paper that occasionally makes it awkward to hold open comfortably.

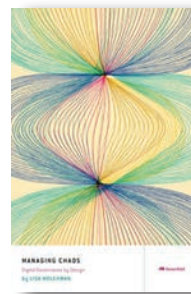
Strizver transmits the joy of using type through her text and examples. For those new to the technical aspects of type, she makes it less intimidating and just plain fun.

Beth Lisberg Najberg

Beth Lisberg Najberg has more than 25 years’ experience as an information and instructional design consultant, documenting systems, developing custom training solutions, and creating technical presentations for large corporations and public entities. She is principal of Beginnings (www.Beginnings-Design.com), an information design consulting firm.

Managing Chaos: Digital Governance by Design

Lisa Welchman. 2015. Brooklyn, NY: Rosenfeld Media. [ISBN 978-1-933820-88-0. 232 pages, including index. US\$39.00 (softcover).]



Organizations, both for-profit and not-for-profit, are finding themselves inundated with data about the organization, product or service, and customers. They face the problem of the public perception of themselves via Web pages. But, with so much data and so many people claiming responsibility for developing those

data on the Web, chaos is a more likely occurrence. That is where Welchman’s *Managing Chaos: Digital Governance by Design* becomes important.

She offers suggestions on how to get those data under control through a digital governance plan that will produce the best public image on the Web for the organization. As she says, “Digital governance is a framework for establishing accountability, roles, and decision-making authority for an organization’s digital presence” (p. 11). But, how is that done? It sounds relatively simple but is actually far from simple, if for no other reason than competing interests. Is the IT department to establish content or marketing or communications or any of several other departments? Can and, more importantly, how should they all work together?

The governance plan Welchman advocates involves three areas: a digital strategy, a digital policy, and digital standards. The first seven of the eleven chapters describe strategies and methods for achieving the plan. The remaining three chapters are anonymous case studies from three areas: business, government, and higher education. In those early chapters, she provides helpful hints such as how to integrate the players in developing this plan.

But there is more to developing the plan than deciding who will determine content. For example, Welchman addresses the political implications in the organization. In her discussion of the digital design framework, the first item is to identify a sponsor and advocate within the organization. Once getting buy-in at that level, you can move forward to identifying members of the design team, start the design effort, and implement the framework that will become the foundation of the digital operations, all of which depend on the organization's digital standards.

Each chapter has easy-to-apply tables to help you develop the plan, Do's and Don'ts, and a comment from someone working in the area. A summary concludes each chapter.

The Case Study section is interesting because there Welchman focuses on a business (Chapter 9), a government agency (Chapter 10), and a higher education institution (Chapter 11). A Coda completes the text.

As I was reading the book, I kept one question in mind: How easy, really, would it be to follow her plan? I thought about situations where I have been involved in developing a Web presence and the often-contentious meetings that would have been more productive if we had had such a governance plan. Welchman succeeds in her suggestions because they can apply to any of the three areas: business, government, and education.

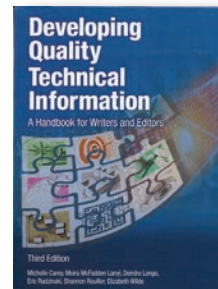
In sum, if you find yourself in a situation where there is digital chaos, then *Managing Chaos* can prove valuable to you.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he serves as guest professor at the University of Paderborn, Germany.

Developing Quality Technical Information: A Handbook for Writers and Editors

Michelle Carey, Moira McFadden Lanyi, Deirdre Longo, Eric Radzinski, Shannon Rouiller, and Elizabeth Wilde. 2014. 3rd ed. Upper Saddle River, NJ: IBM Press. [ISBN 978-0-13-311897-1. 588 pages, including index. US\$49.99 (softcover).]



If you are a writer, editor, or information architect looking for help to improve the quality of the information you develop, consider reading the third edition of *Developing Quality Technical Information: A Handbook for Writers and Editors*. It is organized “to show you how to apply quality

characteristics that make technical information, including information embedded in user interfaces, easy to use, easy to understand, and easy to find” (p. xvii). After an introduction, “easy to use,” “easy to understand,” and “easy to find” are in fact the titles for the book's three main parts. Each part is further divided into individual chapters. A chapter takes a topic, for example, visual effectiveness (chapter 11), which the authors explain (“a measure of how the appearance of information and the visual elements within it affect how easily users can use, understand, and find the information they need”) and then offer several guidelines on what to do to make information visually effective (Apply visual design practices to textual elements/ Use graphics that are meaningful and appropriate/Apply a consistent visual style/and others).

Each chapter ends with a checklist that can be used in two ways: (a) as a reminder of what to look for to ensure a thorough review, and (b) as an evaluation tool to determine the quality of the information. The appendix contains another kind of “master” checklist, which you can use to pull together ratings made from the chapter checklists to ultimately get “an overall picture of the strengths and weaknesses of the information and make a plan for working on the weaknesses” (p. 545). It is no surprise that it is going to take more time to fill out the checklists; this is clearly no small project. When not worrying about the checklists, I still found the book to include timely technical communication topics that I'd like to learn more about, such as design tips for creating videos. The book also has excellent examples, mostly from software, that are in original/revision format (or sometimes include multiple revisions).

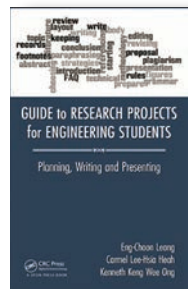
I was happy to see on the IBM Press Web site for *Developing Quality Technical Information* that IBM encourages readers to submit to errata. But then I was disappointed to not find any link to download the actual errata. I also noticed on the Web site that the eBook bundle from IBM Press, which includes the *IBM Style Guide*, *DITA Best Practices*, and “exclusive video walkthroughs help you maximize the value and effectiveness of your technical communications” does not include this third, and most current, edition of *Developing Quality Technical Information*.

David Kowalsky

David Kowalsky is a senior technical writer for F5 Networks. He received his MA in East Asian studies from Washington University (St. Louis) and a certificate of technical writing and editing from the University of Washington. David is an STC Senior Member of the Puget Sound Chapter.

Guide to Research Projects for Engineering Students: Planning, Writing, and Presenting

Eng-Choon Leong, Carmel Lee-Hsia Heah, and Kenneth Keng Wee Ong. 2016. Boca Raton, FL: Taylor & Francis Group. [ISBN 978-1-4822-3877-8. 300 pages, including index. US\$39.95 (softcover)].



Guide to Research Projects for Engineering Students: Planning, Writing, and Presenting works well as a supplemental text for capstone courses where engineering and science students are expected to complete a research project and write empirical research reports. Even if these students have taken a technical writing class,

this book reinforces project management, writing, and presentation skills that are used in the workplace.

Divided into three sections on planning, writing, and presentation, students will encounter short, easy-to-read chapters on every phase of a research project, such as choosing a topic, planning a project, researching, conducting experiments and collecting data, writing reports, editing and proofreading (including one chapter on grammar), and creating and delivering a professional presentation. One helpful aspect of the book is how the examples are geared toward engineering and science students. For instance, the grammar section is

deliberately populated with examples that engineering and science students would encounter in their classes or projects, like the list of irregular nouns and their spellings (algae and alga, antenna and antennae, and nucleus and nuclei).

One distinguishing factor of *Guide to Research Projects for Engineering Students* from other similar texts is how technology is seamlessly integrated into appropriate chapters. For instance, the authors provide screen shots and directions on how to create a Gantt chart in Microsoft Excel and how to generate a list of tables and figures as well as how to write equations in Microsoft Word. If students are using Microsoft Office, and many schools still do, then they will benefit from these directions; however, the instructions are written for personal computers, not Macintoshes, which limits the applicability of this particular aspect of the book. And while the authors do a good job of including screen shots of the toolbars for various versions of Microsoft Word (e.g., to complete tasks such as writing equations), this feature of the book could easily date the content and its usability, thus making it obsolete if newer versions of Microsoft Office or other operating systems or programs become more mainstream. Further, with the focus on technology throughout the book, it is not clear, then, why there is an appendix of common, hard copy editing symbols.

The benefits of using *Guide to Research Projects for Engineering Students* as a supplemental text in engineering and science courses is that it is comprehensive and covers every aspect of a research project. Students will also appreciate the concise chapters and easy-to-read text. And even if students do not use Microsoft Office, they will still benefit from the other well-written and informative content.

Diane Martinez

Diane Martinez is an assistant professor of professional and technical communication at Western Carolina University. She previously worked as a technical writer in engineering, an online writing instructor, and an online writing center specialist. She has been with STC since 2005.

Get to the Point: Trimming Unnecessary Words (Beyond the Style Manual Book 2)

Stefanie Spangler Buswell. 2014. Garner, NC: Red Adept Publishing, LLC. [ASIN B00MSUD45S. 102 pages. US\$4.99 (e-book).]



In 102 brisk pages, *Get to the Point: Trimming Unnecessary Words* accomplishes exactly what it asks of its readers, providing a wealth of useful tips for tightening one's prose. Author Stefanie Spangler Buswell sticks to her own formula, exemplifying the advice proffered on the introduction's opening page: "A

short, terrific piece that tells your story can be better than a long, bloated 'masterpiece' no one will ever be brave enough to tackle" (p. 5). Tolstoy might be grumbling in the great beyond, but the principles Buswell sets forth will benefit writers and editors of all experience levels.

Get to the Point's best advice resides in Chapter 1. Some seem obvious: "ATM" rather than "ATM machine" (p. 19). Others are simple but offer sharp insight: "Her blue eyes were full of fire" instead of the wordy "Her eyes were blue and full of fire" (p. 10). With these and other examples, Buswell demonstrates how redundancy and wordiness can "weigh down" otherwise good writing (p. 9).

Chapter 5 instructs the reader in how to show rather than tell, a skill useful for writers of fiction and journalism. As Buswell notes, a writer need not explicitly state that a man is angry if his description incorporates clues like a red face and shouting (pp. 56–57). Such information is crucial, and by showing rather than telling it, a writer immerses the reader into the story.

Get to the Point's greatest strength is that it offers practical, useful information in specific terms. Besides the long list of redundant phrases included in Chapter 1, Buswell provides specific examples of clunky writing throughout the text. In Chapter 2, she advises against starting a sentence with an indirect construction like "there was." Chapter 6 includes a reminder to consider the reader's experience and knowledge. Some concepts, Buswell argues, will be familiar to most readers and thus won't warrant extensive explanation—especially if the details aren't relevant to the narrative. Chapter 7 warns against unnecessarily long descriptions of food

and combat. Buswell also covers helpful topics that are familiar to seasoned writers, such as passive voice, head-hopping, and Chekhov's gun.

Most helpful is the quiz that follows the final chapter. In prompting the reader to fix 15 dud sentences, Buswell invites her audience into the work and concludes the book in an enjoyably interactive way. Throughout *Get to the Point*, Buswell presents her points in a snappy, no-nonsense style. The clean layout of the examples and quiz questions complement the lively pace to create an engaging read.

Michael A. Cummings

Michael A. Cummings is a graduate student in technical writing at the University of Alabama-Huntsville. In his day job, he writes about European and international soccer for a major online sports media company.

How to Write Brilliant Business Blogs: The No-bullsh*t Guide to Writing Blogs that Boost Your Brand, Business and Customer Loyalty

Suzan St Maur. 2014. HLS Publishing Solutions. [ISBN 978-1-5003-04061-8. 276 pages. US\$22.50 (e-book).]



Suzan St Maur matter-of-factly eliminates the guesswork and angst that can go hand in hand with starting and sustaining a blog. Although her focus is on business blogging, this practical how-to applies to personal and creative blogging as well. She astutely anticipates the questions you've

always had about blog frequency, topic selection and content, key word searches, writing style, and much more. While more than sufficient as a stand-alone book on brilliant business blogging, St Maur liberally provides references to additional resources.

Those tasked with writing blogs about their companies or products will find quick relief in the guidance that St Maur provides. She emphasizes early the need to discard the subject matter expert style of writing with complex terminology and tacit knowledge assumptions to something more conversational and

relevant to the readers with full knowledge transparency. She doesn't merely tell you to do that. She shows you. She leads you through a series of questions and exercises that can help you pinpoint the exact voice that you need for your blog.

Once St Maur has helped you establish your voice, she leaves the rest up to you. The remainder of *How to Write Brilliant Business Blogs* is an A to Z list of topics that you can select based on your own blogging needs. For example, are you starting from zero? St Maur has that section covered. Go to the Z section for "Zero, Starting from." Are you already blogging for your business but unsure of how to promote your efforts? Go to P for "Promoting your Blog Posts." For those wanting to get the most out of St Maur's book, keep reading sequentially when she gets to her A to Z list. Although no list can be exhaustive, readers will take away a multitude of ideas. Would-be book authors will learn how to turn their blogs into books. Those still steaming from that morning's road rage incident will discover how to approach a rant blog. Best of all, all bloggers will benefit from St Maur's advice about maintaining their own personality in their writing, which St Maur exemplifies herself.

Don't let the book's size (276 pages) discourage you. This is a fast, easy read with St Maur's no-nonsense voice and sense of humor coming through loud and clear. You will be picking up applicable tips from the very first pages.

Liz Herman

Liz Herman, PhD, is a knowledge management practitioner who is certified in project management and technical communication. She is a senior member of STC and is active in STC's Washington DC Chapter. She currently works for Battelle in its Health and Analytics business unit.

Ethical Issues in Science Communication: A Theory Based Approach (Proceedings of the Iowa State University Summer Symposia on Science Communication)

Jean Goodwin, Michael F. Dahlstrom, and Susanna Priest, eds. 2013. Seattle, WA: CreateSpace Independent Publishing Platform. [ISBN 978-1-4904-4881-0. 372 pages. US\$13.28 (softcover).]



Ethical Issues in Science Communication: A Theory Based Approach encompasses papers selected from Iowa State University's Third Summer Symposium on Science Communication. Its content will resonate among technical communication scholars and

teachers and those technical communication practitioners wrangling with weighty ethical implications of their writing that result from science-based discourse.

As Goodwin, Dahlstrom, and Priest point out in their introduction, symposium participants were asked to contribute to the following research areas: underlying goals of science communication, including why communication is necessary; ethical issues around self-promotion or political issues; ethical issues around the ways scientific communication is improved or made more effective; science communication changes and impacts for new communication channels like blogs; ethical issues in communicating science content accurately and to a lay audience; public perception problems related to engagement; and approaches to teaching ethics related to science communication.

The sheer information technical communicators can glean from these proceedings is helpful in many ways. First, the breadth and depth of the research topics ensure a high level of relevance to ongoing scholarly research and to actual on-the-ground or in-the-conference-room issues. That is, something will resonate with the technical communicator whether it is the health communications writer reading about "The Discursive Construction of Risk in Medicine and Health Media" by Carolina Fernandez Branson or the Ph.D. candidate identifying additional resources through the extensive list of references accompanying each paper—see "The Two-Dimensional Values Gap in the GMO Controversy" by Daniel Hicks. Second,

the authors' email addresses are available for further follow-up and dialogue around these pressing subjects. Although not tested by this reviewer, it is assumed that these researchers would welcome inquiries to discuss their research. Third, comprehensive visual images accompany several articles promoting understanding and supplementing text-based content.

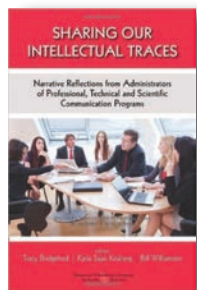
While not intended for the casual reader, technical communicators interested in thinking rhetorically about their role in science-based communication will find the dialogue about ethics, technology, policy, and user engagement highly thought-provoking. Some will even find frameworks and models to apply to suit their particular research interests.

Liz Herman

Liz Herman, PhD, is a knowledge management practitioner who is certified in project management and technical communication. She is a senior member of STC, active in STC's Washington DC Chapter, and an Iowa State alumna. Liz currently works for Battelle in its Health and Analytics business unit.

Sharing Our Intellectual Traces: Narrative Reflections from Administrators of Professional, Technical, and Scientific Communication Programs

Tracy Bridgeford, Karla Saari Kitalong, and Bill Williamson, eds. 2014. Amityville, NY: Baywood Publishing. [ISBN 978-0-89503-870-8. 236 pages, including index. US\$46.95 (softcover).]



While scholarly literature covers administration of university writing programs, this research often focuses on composition programs that are several times larger than the most robust technical communication program. This book widens the intellectual conversation by

collecting narratives from a wide range of scholars and programs. *Sharing Our Intellectual Traces: Narrative Reflections from Administrators of Professional, Technical, and Scientific Communication Programs* presents issues unique to running a writing program focused on science, technical, or

professional writing that can help us make sense of the work that we do.

Some chapters offer case studies of program development, assessment, dealings with and within university administrative hierarchies, or the nitty-gritty experiences ubiquitous in academe. Topics range from the expected (purchasing computers and software) to surprising (study abroad). If nothing else, these chapters offer sympathetic narratives that speak to the writing director: You are not alone.

The Council of Writing Program Administrators (CWPA), “the” professional organization for writing directors, has invested significant time developing their outcomes statement, a document that essentially outlines the standards for teaching first-year college writing. One chapter discusses the difficulties that arise when technical communicators “categorize, interpret, and explain our work from a standpoint of first-year composition” (p. 53). The authors present an argument for why a TC-WPA statement is needed and then describe the methods they use in creating the outcomes. A detailed outcomes statement follows that emphasizes technology, production, and *techné*. The authors largely agree that the broad outcomes for writing have the same base values even though they set out to separate from and establish different concerns than the world of first-year writing.

Another chapter, “Expertise in Professional Communication as a Catalyst of WAC/WID Administration Success,” describes efforts at the University of Central Florida to use professional writing experiences in developing a robust Writing Across the Curriculum/Writing in the Disciplines (WAC/WID) program. Yet another chapter presents two “Clinical Moments” examples: the first about commingling of various roles (researcher, administrator, teacher), and the second about service learning.

Sharing Our Intellectual Traces also contains an engaging chapter, “Leaders Becoming Transformed,” that classifies leaders into transactional (“getting the job done”) or transformational (“transforming others into leaders to get the job done”) (p. 99). Morgan defines leadership styles and argues for a leadership style that calls on prosocial power rather than personal power. After a brief case study, the chapter presents a few examples on enabling these leadership skills, yet the examples could be more detailed or instructional. In fact, many chapters are short, and while the case

studies are fully developed, some readers might be wanting for a more didactic approach.

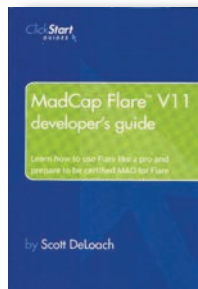
The book focuses more on technical writing than professional writing, while science writing gets cursory treatment throughout. Still, this is a much-needed book that “provide[s] a framework for understanding and addressing” the “common themes” (p. vii) experienced by writing program administrators who work in these fields.

Kelly A. Harrison

Kelly A. Harrison, MFA, works as a consultant, speaker, and writing instructor in San José, CA. For over 20 years, she has written print and online content for various high-tech computer companies. Currently, Kelly teaches writing at San José State University and Stanford University.

MadCap Flare V11 Developer's Guide: Learn How to Use Flare like a Pro and Prepare to be Certified MAD for Flare

Scott DeLoach. 2015. ClickStart, Inc. [ISBN 978-0-578-16074-9. 432 pages, including index. US\$32.00 (softcover).]



DeLoach's *MadCap Flare V11 Developer's Guide: Learn How to Use Flare Like a Pro and Prepare to be Certified MAD for Flare* is a fantastic user manual for those wanting to learn and master MadCap Flare. MadCap Flare, a leading edge, single-source publishing software, creates polished documents that are

ready to publish on multiple platforms if used to its full capabilities. DeLoach streamlines the creation process, allowing for a task-based experience.

This book serves as a sound reference volume for the casual or professional user, although it was written as a Mad certification supplement for the MadCap Flare training class. Aside from the “What’s new in Flare 11” section, a great table that lists eighteen of the major additions to the manual in response to users’ requests, there are over 200 new topics included in this manual to enhance software usability. Besides the table, new additions are also flagged for easy location

both in the table of contents and the text. A few new additions include “Inserting a YouTube or Vimeo video,” “Quick Launch Bar”, “Pinning Projects” in the Flare Customization section, and “Binding a Project to Source Control.”

Some helpful features of *MadCap Flare V11 Developer's Guide* are the “Converting from Doc-to-Help,” “Converting from RoboHelp,” and “Converting from FrameMaker” sections. These three sections include guidance for when information appears to be dropped or moved. Some personal favorites are the “Top ten . . . ‘gotchas’” subsections included for both RoboHelp and FrameMaker. These sections explain how MadCap Flare is similar enough to RoboHelp or FrameMaker to be troublesome and gives helpful guidance by identifying the top ten trouble spots so users can better navigate within the software when converting files from other programs. DeLoach also answers the “What happens to my . . . ?” questions that are unique to Doc-to-Help, RoboHelp, and FrameMaker conversions with clear, helpful tables.

The book thoroughly explains how to import documents or files originally created in different formats as well as transferring documents from one Flare project to another. At the head of each section, such as “Importing DITA documents” or “Importing HTML and XHTML files,” DeLoach includes a highlighted text box with keyboard shortcuts, where to find the task in the Tool Strip, and where to find the task in the Ribbon. All shortcut information is also located in the Appendices for quick access.

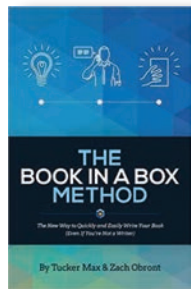
DeLoach's *MadCap Flare V11 Developer's Guide* is a helpful, clear manual for any writer who wants to create effective, beautiful, and single source documents using MadCap Flare. By listening to his readers, DeLoach has added content that will only enhance the user's experience with the software. This is a book worth adding to any MadCap Flare user's bookshelf.

Laura McVay

Laura S. McVay is an English and technical communication graduate student at The University of Alabama in Huntsville. She is currently working as the technical writer and editor for a local scientist's book on professional development.

The Book In A Box Method: The New Way to Quickly and Easily Write Your Book (Even If You're Not A Writer)

Max Tucker and Zach Obront. 2015. Lioncrest Publishing. [ISBN 978-1-61961-346-8. 130 pages. US\$9.99 (softcover).]



There are dozens of “how to write” guides available to the public; just walk into any bookstore in the country to confirm this. However, most of these fall into the self-help or “how to find your muse” categories. So if you are looking for a book about which quaint wooden cabin to isolate yourself in while

you bang away at your keyboard, *The Book in a Box Method: The New Way to Quickly and Easily Write Your Book (Even If You're Not A Writer)* is probably not what you're looking for. But if you're looking for a practical book for writing methods, well, that's another story entirely.

The Book in a Box Method provides a unique alternative to traditional authorial practices. While most people would tell you to simply start writing, be it an outline or a rough draft, the authors recommend that absolutely no actual writing be done until the very end of the book writing process. At first blush, this method seems paradoxical. How can you possibly write a book without writing? Quite easily, as it turns out. This book accomplishes this seemingly impossible task by teaching the author-to-be how to organize his or her potential book and then to dictate the content.

The first steps in this process involve determining why you want to create a book, who you want to create it for, and how you want your book to be structured. Once the structure is in place, the authors walk you through the process of dictating and translating your manuscript. That's not to say that the process outlined in this book is completely effortless; the process outlined in *The Book in a Box Method* does require several hours of introspection, interviewing, and revision.

There is no contesting the fact that writing is a difficult skill that most people simply don't have the time to master. *The Book in a Box Method* provides a way for those who are not authorially inclined to produce a book in a timely manner. If you're looking to write a book, for whatever reason, but don't want to spend

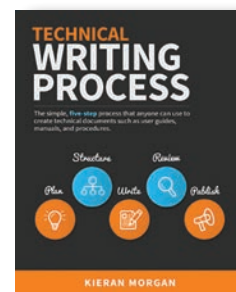
hours stressing out over a blank page, *The Book in a Box Method* is definitely worth a look.

Emily Czerniewski

Emily Czerniewski is an undergraduate student in mechanical engineering at the University of Alabama-Huntsville with a focus in technical communication.

Technical Writing Process: The Simple, Five-Step Guide that Anyone Can Use to Create Technical Documents such as User Guides, Manuals, and Procedures

Kieran Morgan. 2015. St Leonards, Australia: Technical Writing Process. [ISBN 978-0-9941693-1-0. 248 pages, including index. US\$24.95 (softcover).]



Should technical writing manuals be limited to writing and writers? Kieran Morgan doesn't think so. In a genre dominated by primers to the field, *Technical Writing Process: The Simple, Five-Step Guide that Anyone Can Use to Create Technical Documents such as User Guides, Manuals, and*

Procedures stands out from other manuals by offering a five-step framework for content creation and management. Morgan offers a useful guide for users of all backgrounds and skill levels by focusing on the project management aspect of technical communication.

As a veteran of the technical communication industry, Morgan understands there is “no such thing as a hard line when it comes to what technical writers do” (p. 21); however, writers can benefit from a process-based approach to writing. “As with any other business and engineering endeavor,” Morgan says, “technical writing is a definable, repeatable, predictable process. It can be planned, scheduled, and executed in a manner that leads to predictable outcomes, quality, and timing” (p. 10). Implementing a predictable process is not only beneficial for projects and project managers but also for defining and exemplifying the importance of technical communicators in the workforce.

Morgan's methodology for project management makes up the manual's five-step approach: planning, structuring, writing, reviewing, and publishing.

Technical Writing Process addresses common concerns in each step, such as briefings, team relationship building, establishing document control, and design techniques and tools. Case studies, graphic representations, offset definitions, and topical callouts provide insights for Morgan's concise prose.

The methodology of *Technical Writing Process* builds thoughtfully and cohesively through the chapters. In fact, the chapter titles and headings alone could be used as a helpful roadmap out of nebulous projects. Morgan's methodological implementation through project creation ends with an appendix of status-checking templates. This practical end to *Technical Writing Process* includes matrices, checklists, and worksheets that can be used with the five-step process. The templates can also be downloaded for a fee at <http://www.technicalwritingprocess.com>.

Morgan's focus on linear, process-based documentation may seem like a contradiction for technical communicators who regularly reschedule and remake documents for changing objectives and deadlines. However, Morgan acknowledges that the process is meant to be modified to suit teams and projects, and this emphasis on compromise and flexibility is reassuringly repeated throughout the manual.

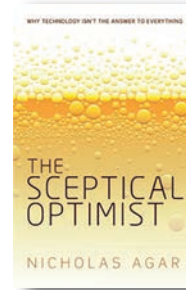
Morgan is right to look at aspiring technical communicators with fresh eyes. Unlike other manuals, *Technical Writing Process* is accessible to all users. By eschewing the typical broad industry introduction used by many technical writing manuals, Morgan's process is accessible to aspiring writers of all backgrounds. Jumping immediately into planning, structuring, writing, reviewing, and publishing, *Technical Writing Process* can get your very first or one-hundred-and-first project on track.

Molly Kitts

Molly Kitts is a graduate student at the University of Alabama in Huntsville. Formerly a writing tutor for students from elementary to graduate school, she is now a freelance consultant, specializing in Web content writing.

The Sceptical Optimist: Why Technology Isn't the Answer to Everything

Nicholas Agar. 2015. Oxford, England: Oxford University Press. [ISBN 978-0-19-871705-8. 206 pages, including index. US\$29.95 US (hardcover).]



Most of us deal so much in technology every day that we are almost like fish in water—technology being the water that we swim in but fail to notice. Australian philosopher Nicholas Agar attempts to examine the underlying beliefs about that technology: “This book is concerned primarily to reject exaggerated claims about the value of technological progress” (p. 84).

This rejection is not based on an attempt to return to some kind of pre-technological state. As he puts it, “The Luddites are wrong. But so are the radical optimists” (p. 167). What is the source of this radical technological optimism, and why does Agar oppose it?

There are two main sources for radical technological optimism. First, there is a deep-seated belief that is based on a need to see the human condition as improving: “The popularity of recent radical optimism results partly from a near universal need to see our belief in human improvement vindicated” (p. 186). We need to believe that things are always getting better, and if technology creates any problems, then technology can solve these problems as well.

The other source of radical technological optimism can be found in two “laws” of technological progress. The first is Moore’s Law, which states that the power of integrated circuits (in computers) doubles approximately every two years. The other is Kryder’s Law, which states that the capacity of hard disks to store data doubles every 13 months. We’re always upgrading our computers because of these laws.

But these laws are inappropriately applied to such things as cancer research and poverty, and obviously these two areas have not been solved by technology. People are still dying from cancer at alarming rates and the poor are still very much with us.

So Agar opposes radical technological optimism because it breeds false hopes. And when we place our faith in it, other issues get ignored, such as social justice, climate change, education, unemployment, and poverty.

Agar hopes that an experimental approach to technological progress will enable us to “decide whether a particular avenue of technological progress can be safely globalized” (p. 100). He believes that democracy will make such progress experiments possible.

The value of *The Sceptical Optimist: Why Technology Isn't the Answer to Everything* for technical communicators is that it gives us a chance to think about the water that we swim in every day. Is every new gadget that comes out worth our time and money? Are we critical in our reception of the technological marketing that we are bombarded with constantly? Do we uncritically accept every new thing that comes along?

One thing that made me wonder about Agar's critique of radical technological optimism is the amount of dystopian literature and movies in our culture. If anything, our young people may be pessimistic about our future, even as they are uncritical about our present.

Charles R. Crawley

Charles R. Crawley is a lead technical writer for Rockwell Collins in Cedar Rapids, Iowa. He does not own a smartphone or have a Facebook account, but he does spend at least eight hours every weekday in front of a computer, which disqualifies him as a Luddite.

How to Write Perfect Press Releases: Grow Your Business with Free Media Coverage

Steven Lewis. 2015. Rozelle NSW, Australia: Taleist. 2nd ed. [ISBN 978-0-9808559-8-5. 104 pages. US\$15.99 (softcover).]



A quick read at 104 total pages, *How to Write Perfect Press Releases: Grow Your Business with Free Media Coverage* is a little book with a big message. It is a complete manual for any writer hoping to get media coverage.

Lewis guides readers through every imaginable scenario one might encounter on the road to recognition. A past editor, journalist, and public relations professional, he shares many unique examples to describe best and worst writing practices. You'll meet an arrogant self-publisher who achieved notoriety on a blog by sending a lazy

press release, a lawyer intent on cataloguing every minute business transaction, a creative pastry chef enriching her community, and an author who bungled her message to a popular blogger so badly she was forced to write under a pseudonym.

The first three sections; “Developing the Right Mindset,” “Profiling your Targets,” and “Working the Angles;” focus on planning your message and honing that message to your chosen publication and journalist. In Section Two: Profiling Your Targets: How to Pick a Journalist, Lewis writes: “When you find a journalist you think might fit with your story, Google her for more clues . . . imagine this journalist writing your story. Having read some of her other pieces, can you imagine her writing a piece about you?” (pp. 39–40). His questions feel like candid advice from a friend or mentor.

We learn that bloggers and news journalists are vastly different and the relationship is never equal: “Unless you're Octomom or landing a 747 on the Hudson River, you're asking journalists for a favour, not doing them one. . . . If you go into this believing that you're giving a gift rather than receiving one, it's less likely to go well for you” (p. 30).

The last sections; “Writing your Release,” “Loading the Spoon,” and “Releasing the Release;” concentrate on the craft of writing. Again, the reader receives thorough instruction with useful examples. Lewis uses a TMZ news report about Michael Jackson's death to teach us the importance of packing our facts into the front of our stories. “Loading the Spoon” discusses current media trends such as the prominence of video and how to format photographs for different platforms, including Facebook, Twitter, and Instagram.

Jam-packed with information, the pages of *How to Write Perfect Press Releases* feel crowded. The editor attempted to break up the busy text by inserting dialogue boxes but the font size and type used within them is too similar to the surrounding text to offer any visual relief. It is a small complaint, overridden by the book's excellent content.

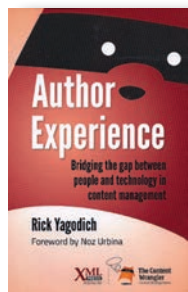
Nonprofit teams, entrepreneurs, and public relations professionals will find this book invaluable in their quest for publicity. Even if you're not clamoring for attention, *How to Write the Perfect Press Release* is a good way to sharpen those rusty journalism skills.

Martha Jordan

Martha Jordan is a technical communications student at the University of Alabama in Huntsville. She is interested in social media, marketing, and science writing. Martha blogs and tweets for Alabama's Center for Sustainable Energy. She has a Master's degree in Education and ten years' teaching experience.

Author Experience: Bridging the Gap between People and Technology in Content Management

Rick Yagodich. 2015. Laguna Hills, CA: XML Press. [ISBN 978-1-937434-42-7. 166 pages, including index. US\$24.95 (softcover).]



Yagodich begins *Author Experience: Bridging the Gap between People and Technology in Content Management* by defining “author experience” (AX), a term he coined in 2010 (p. vii). He addresses the imbalanced emphasis placed on user experience (UX) versus AX and advocates for effective content management systems (CMSes). He

asserts, “If the tools are not fit for the purpose of creating and managing content, how can we ever create that optimal end user experience?” (p. 5). Yagodich argues that UX and AX should be given equal consideration when choosing a CMS. An author is not just a content originator but someone “who interacts with the CMS” (p. 7). Additionally, “Author experience, as a discipline, is the provision of **contextually appropriate functionality** within a content management environment” (p. 11).

Yagodich makes a valid point—the intended purpose of a CMS needs to be clearly defined before purchase and implementation. This may seem obvious to some, but according to Yagodich, it is an issue that continually plagues the work environment. Yagodich argues that another common issue is IT departments are responsible for CMS purchases, and he asserts that those responsible for managing the content are not usually consulted. Therefore, he provides RFP criteria that should be applied when choosing a CMS: (a) “The content managed through the system fulfills a purpose,” and (b) “The system enables authors to manage that content properly” (p. 18). Yagodich addresses those with the

power to purchase CMSes: “If you don’t invest in author experience, the value of the CMS is severely degraded, and the end-user experience is jeopardized” (p. 20).

Yagodich goes on to address people, technical, process, and conceptual challenges, and he places great responsibility on the author to tackle these issues by challenging technologists and developers. The author presents an interesting “Hierarchy of Author Experience Needs,” which “starts with the reduction of pain and moves to enhancing productivity and value” (p. 53). Yagodich provides a five-step process for conducting an AX audit to evaluate a current CMS and determine the requirements for a new one. He includes design patterns in CMSes and groups them into three categories: (a) “Micro-copy management and usage patterns, (b) “Author interface patterns,” and (c) “Technical patterns” (p. 117).

Yagodich admits that the AX field is relatively new, but he argues that it will eventually “become a recognized and expected part of every content system project” (p. 141). His perspective is refreshing, and he continually stresses the importance of AX with UX. Yagodich states that AX should not be an afterthought, and he expertly relays this message by providing a multitude of real-world examples to support his claims, many of which he pulls from his own professional experience.

Britney Ashford

Britney Ashford has two 2 years of technical communication experience. She is a graduate student at the University of Alabama in Huntsville.

The Principles of Beautiful Web Design

Jason Beaird and James George. 2014. 3rd ed. Sebastopol, CA: SitePoint. [ISBN 978-0-9922794-4-8. 194 pages. US\$39.95 (softcover).]



Have you ever asked the question: What is the influence of the Web on print media? It’s not just the Web, but the little “weblets” it has spawned: e-readers, tablets, and smart phones.

This excellent primer on Web design does not address this question. But we can extrapolate as we go deeper.

What the book does offer is grounding in a genre that affects virtually everyone in the modern world, which for that reason influences how we write and how we perceive language itself.

While the book's primary audience is Web programmers and developers, it is also addressed to readers "at any level;" and it is this secondary audience that needs more help. Those in the field will know the words and concepts in the book. But many terms will be unfamiliar to nonspecialists and will need clearer defining. For example: "A CSS framework is a CSS system that is set up to handle the grid structure of a website" (p. 13). Or: "Every web page has a container. This could be in the form of the page's body tag, an all-containing div tag" (p. 8). In both cases, one unknown term is being defined by another.

It would help having a glossary after each chapter, but the book has none. And no index. The lack of a glossary and index, plus a fair number of unclear definitions, make it harder for the nonspecialist to successfully navigate the text.

On the other hand, for the print-oriented, *The Principles of Beautiful Web Design* expands the very definition of content to include text, images, and video. "Print workers" realize this but don't take it seriously.

Similarly, when dealing with paragraph divisions, the book stresses that readers may benefit from having a stronger separator than a heading or white space—something with greater visuality, such as a row of icons, especially if you can find one that reflects the information. A yin-yang, say, that ends a paragraph discussing two sides of an issue that both have merit.

The book emphasizes white space more than we tend to on the printed page. It stresses that "empty space on a page is every bit as important as having content. Without carefully designed white space, a design will feel closed in, like a crowded room" (p. 9). Sure, a Web site has a different dynamic than a printed page, but that dynamic is changing.

Similarly, *The Principles of Beautiful Web Design* expands our more book-oriented meaning of emphasizers, which it defines as whatever draws the reader's attention. On the Web, these things normally relate to the image, in print, they relate more to words. Page design is usually left to the book designer.

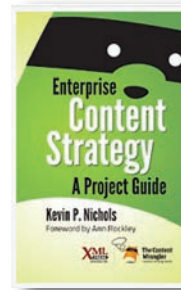
The Web marries two different ways of expression and understanding: the artist's and the writer's. The artist's came first—before there were words, there were images. We seem to be returning to that earlier revelation.

Steven Darian

Steven Darian is an STC Fellow, having retired from teaching business and technical writing at Rutgers for 33 years and in eight countries. He was a manager for Raytheon in Saudi Arabia. Steven's most recent book is "Tools of the Trade: Technique in Nonfiction, 2015."

Enterprise Content Strategy: A Project Guide

Kevin P. Nichols. 2015. Laguna Hills, CA: XML Press. [ISBN 978-1-937434-44-1. 150 pages, including index. US\$24.95 (softcover).]



Enterprise Content Strategy: A Project Guide discusses the enterprise content strategy lifecycle around content experience, delivery, and governance. The enterprise content strategy lifecycle has seven phases: plan, assess, define, design, build, publish, measure, and optimize. Governance plays a large part within the lifecycle phases, while content refers to more than just text; it includes images, videos, PDFs, and metadata.

Content strategy assessment consists of a content (quantitative) inventory and audit (qualitative) analysis. You can do one first, then the other, or both simultaneously. You can use an automated tool like the Content Analysis Tool (CAT) for content discovery or do it manually to discover the content types. From the audit, you can determine if the content should be "migrated as is, reworked, or deleted entirely" (p. 40). Nichols offers a spreadsheet template that you can download from his Web site at http://kevinpnichols.com/downloads/kpn_content_audit.xls.

In the define phase, you build your content strategy framework: the content findings and implications (audit report), framework and strategic recommendations, and roadmaps. You then review the information and extract the "current issues, gaps, choke points, and redundancies" (p. 50). Nichols starts with a basic content strategy framework outline (pp. 50–52) to help finalize the "strategic intent around the content experience" before entering the design phase (p. 62).

Designing content requires paying attention to the omnichannel experience. Our audiences now expect

content delivery in multiple ways to be available on multiple devices with that content being responsive or adaptive. Nichols says, “Use a responsive approach for content shared across devices; use an adaptive approach for content that changes across devices” (p. 88).

Publishing content occurs when that content is pushed out to the intended audience that is then closely followed by measuring the “strengths and weaknesses of the solution design and provide[s] impetus for content and solution optimization” (p. 107).

In optimization you continually review the content to see if it is still “relevant, contextual, and timely” (p. 117). If not, then you may need to remove the content that is no longer valid based upon the collected metrics.

Governance rounds out the enterprise content strategy lifecycle by ensuring that “once a content strategy is implemented, it will be maintained and positioned to evolve and grow by using ‘roles (people), process, and standards’” (p. 123).

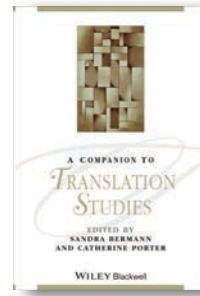
Enterprise Content Strategy: A Project Guide is packed full of useful information on setting up an enterprise content strategy project. The tables provided give you a starting point in setting up your enterprise content strategy project. Each chapter concludes with an Additional Reading section where Nichols refers you to other key content strategists’ books and Web sites. Drawbacks to the book are the graphics (the size and color choice) and the copyediting errors. This book is a must-have for content strategists’ personal library as are the other books in the Content Wrangler Content Strategy Series.

Jackie Damrau

Jackie Damrau has more than 25 years of technical communication experience. She is a Fellow and member of the STC North Texas Lone Star chapter and the Instructional Design & Learning SIG. She serves as the book review editor for Technical Communication.

A Companion to Translation Studies

Sandra Bermann and Catherine Porter, eds. 2014. West Sussex, United Kingdom: Wiley-Blackwell. [ISBN 978-0-470-67189-4. 638 pages, including index. US\$136.00.]



Written translation has been a part of business, science, and diplomacy since early times; yet, as an academic discipline, it just began to flourish in the mid-20th century.

A Companion to Translation Studies divides the field into two realms: (a) referential, basically nonfiction, and (b) literary,

including fiction, canonical works of philosophy, and sacred texts. These genres have their own cultural and historical backgrounds. How much background does a translator need before translating a work authoritatively? How much of the translator’s job is to make the material more interesting, enjoyable, and easier to understand and remember than the original? The question targets both literary and referential writings.

While Bermann and Porter stress the importance of translation in a global world, they focus more on the literary side, which runs counter to the craft’s history. The foremost achievement of the 8th century translation schools was in translating the bulk of Greek secular learning in philosophy and science: in mathematics, astronomy, optics, and medicine into Arabic. From there, the movement spread to Sicily, to Córdoba, and Toledo, where the target language changed from Arabic to Latin, and then into the vernaculars. The translation movement, from its beginnings, focused chiefly on referential works. Yet, our study might place greater emphasis on expository texts.

A Companion to Translation Studies does provide a chapter on The Expository Translator plus two articles on machine translation, a technology that is revolutionizing the field. The essay on Machine Translation (MT) reads like an espionage novel: we witness MT’s enthusiastic birth in the 1930s and 40s in the Soviet Union and the US, further propelled by the World War II advancements in military technology and cryptanalysis. The Cold War ushers in the Golden Age of MT with proponents on both sides convincing their governments to spend more with meager dividends.

After 1968, things changed, as professional translators and computer scientists joined to produce more enduring results. Witness the English-to-French

Systran system used by Google Translate until 2007, natural language processing in artificial intelligence, plus the emergence of computational linguistics.

The second essay, on localization, discusses adapting software to different languages and cultures. It provides a short overview of the earlier labor-intensive challenges then shifts to the more efficient present-day practices in software localization, such as internationalization, object-oriented programming, documents-to-content, chunking, and single e-source publishing. Advances in localization for mass marketing have helped make writing and publishing a more global enterprise.

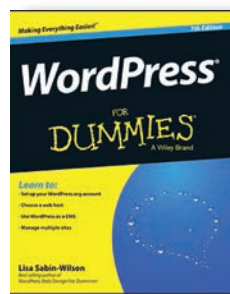
A chapter on text analysis reveals fascinating differences between languages: Writing systems, like Chinese and Japanese, hinder the rich word play common in English. Different languages also have different grammatical resources: English often emphasizes a word by placing it at the end of the sentence (many languages do not) and English has a lack of cases and genders that enables a word from one part of speech to become a word from almost any other.

Tetyana Darian

Tetyana Darian is an STC member and graduate student in computer science with interests in machine translation, localization, and artificial intelligence.

WordPress for Dummies

Lisa Sabin-Wilson. 2015. 7th ed. Hoboken, NJ: John Wiley & Sons, Inc. [ISBN 978-1-119-08857-8. 408 pages, including index. US\$26.99 (softcover).]



WordPress for Dummies is a well-organized resource for those wanting to create their own Web page using the WordPress platform. WordPress is a free program that lets you create and maintain a blog or non-blog Web site with minimal technical knowledge. There are two forms of WordPress: Wordpress.

com where you host your blog and Wordpress.org where you use their software on a Web site that you control. WordPress' real power is realized when you choose the second option, and accordingly, that is the book's focus. Sabin-Wilson simplifies complex technical issues associated with running your own Web site without sounding

pretentious. She takes you through installation to customization and delves deep into powerful functionality, all while suggesting best practices for each.

Starting your own blog or Web site is perhaps one of the most daunting aspects you may face. Creating a Web site from scratch has many complex steps, which this book breaks down into easily understandable, achievable tasks. Even though not all Web pages use WordPress, Sabin-Wilson takes the time to go beyond WordPress and explain Internet concepts such as domain registration and Web hosting, as well as to list some sample companies that offer such services. After underlying Internet needs are covered, the book moves on to blogging, a common WordPress use. Sabin-Wilson discusses basic blogging techniques along with ways that you can use WordPress to enhance your posting experience with images, videos, and plugins—small programs that integrate with WordPress to enhance its usability and functionality. Next, it covers WordPress themes, which control the look and feel of your WordPress output page. The discussion of themes and templates is quite detailed and, while elegantly explained, may prove challenging for non-technical readers due to the sophisticated nature of the topic. Pushing onward, Sabin-Wilson discusses using WordPress as a Web authoring tool beyond blogging. She smoothly moves you across a variety of technical topics without overwhelming you.

Overall, *WordPress for Dummies* is an excellent reference book for both beginner and advanced WordPress users. Not every WordPress user will take advantage of everything WordPress has to offer, but this book strives to cover every situation possible in great detail. Like other books in the *For Dummies* series, *WordPress for Dummies* is organized and styled in a standard, easy-to-follow format that lends itself to either a quick reference check or a comprehensive study of a topic. In the past, I've used another WordPress reference book, and I find Sabin-Wilson's book to be superior. Therefore, I recommend this book for both veteran WordPress users and anyone setting out on their first WordPress adventure.

Timothy Esposito

Timothy Esposito is an STC Senior Member with over 15 years of technical communication experience. He is currently vice president of the STC Philadelphia Metro Chapter. Before becoming VP, Timothy was chapter treasurer, Web master, and scholarship manager. He lives just outside Philadelphia with his wife, son, and two retired greyhounds.

The Presentation Lab: Learn the Formula behind Powerful Presentations

Simon Morton. 2014. Hoboken, NJ: John Wiley & Sons. [ISBN 978-1-118-68700-0. 254 pages, including index. US\$30.00 (softcover).]



The graphic design, layout, and content structure of Simon Morton's *The Presentation Lab: Learn the Formula behind Powerful Presentations* reflect the title's laboratory theme, with abundant science-inspired visuals and "elements" standing in for chapter headings. From the introduction

in Element A to the conclusion in Element H, Morton guides presenters through audience analysis, message identification, and content creation to final delivery. The first two elements supply background information to situate and inform the methods presented in subsequent elements. Topics discussed include a brief coverage of relevant cognitive science research on communication and learning, along with an overview of business storytelling and how to incorporate it into presentations.

Element C, "The Base Elements of Your Presentation," covers audience analysis, which Morton considers the key to presentation success. He argues that the presentation audience falls into one of three categories: factual, emotional, and visionary. Knowing how these personality types process information and respond to communication can help presenters use the right rhetorical and visual methods for better audience engagement. Once presenters understand the audience and their own presentation goals, they can begin identifying and crafting an effective message and call to action.

In Element D, "Creating Compelling Content," Morton presents a clear distinction between the presentation's message—"Our company has the best solution"—and the content, "... the information you need your audience to know to help drive the message forward" (p. 99). Addressing the common habit of packing a presentation with too much information, he advocates a thorough editing process and presents three criteria for content consideration: compatibility, relevance, and discriminability. Of particular note are Morton's guidelines for selecting images (with attention to cultural sensitivity) and his advice on avoiding visual clichés (the ubiquitous images of puzzles, dartboards, and handshakes).

Speakers who must deliver the same presentation to different audiences should adapt each presentation to that audience's needs using Morton's methods and techniques. He defines this approach as "blended presenting," when a speaker uses the appropriate visual engagement tool(s) for the particular audience and situation. Morton explains the method in Element E, "Delivering the Final Results," and follows it with a discussion of five popular presentation tools, such as Microsoft PowerPoint, Apple Keynote, and large-scale white boarding. He reviews each tool, noting the good and bad points, when to use them, and what types of audiences with which to use them.

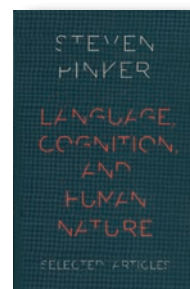
Case studies (Element F) and guidance for presenters working with someone else's material (Element G) complete the volume. Practitioners assisting SMEs in revising or updating presentations will find this book of special interest. Overall, *The Presentation Lab* is an entertaining, general guide to creating presentations without limiting itself to one method or software. Readers new to creating presentations will find a sound approach to creating and editing focused presentations adaptable to many different situations. Expert readers will find new advice and ideas to add to their own presentations.

Lee Andrew Hilyer

Lee Andrew Hilyer is the head of Information & Access Services at the University of Houston Libraries. He received his M.Ed. in instructional technology from the University of Houston and is the author of *Presentations for Librarians: A Complete Guide to Creating Effective, Learner-Centered Presentations* (Chandos, 2008).

Language, Cognition, and Human Nature: Selected Articles

Steven Pinker. 2015. New York, NY: Oxford University Press. [ISBN 978-0-19-025928-0. 378 pages, including index. US\$19.95 (softcover).]



For more than three decades, Steven Pinker has been making major contributions to the fields of cognitive science, evolutionary psychology, and linguistics. His brilliance and the lucidity of his writing have earned him fans both in and out of academia. Currently at Harvard, Pinker is the

author of more than a dozen books, many aimed at an educated lay audience. But many of his most important papers have appeared in technical journals not easily obtained by the general public.

To make this work more accessible, the present volume reprints thirteen classic papers and provides an excellent introduction to the range of Pinker's thought. Because many of the papers were written as part of a larger academic debate, Pinker provides each with an introduction, placing it in context.

Many of the articles deal with what Pinker calls the language faculty, the unique human ability to learn and understand language. In "Formal Models of Language Learning" and elsewhere, he addresses the intriguing issues involved in understanding how children acquire language. By roughly the age of three, all normal children attain the ability to generate grammatically complex sentences in their communal language. But modeling how they do so is both interesting and difficult. Pinker lays out the conditions of an adequate theory (work for all languages and cultures, work within a limited time frame, comport with what we know of the cognitive abilities of the very young, and so on). He examines a number of models. While each model sheds some interesting light, Pinker argues that each fails in important ways. Other articles deal with how we learn to understand specific language structures. "Rules and Connections in Human Language" and "The Acquisition of Argument Structures" deal with how we master the quirks of verb usage to understand who did what to whom, to what extent, and when they did it.

In several of Pinker's essays, he covers issues of language in human evolution. In "Natural Language and Natural Selection," Pinker argues that the human language faculty is adaptive and that it evolved due to evolutionary pressures. In "The Cognitive Niche," Pinker explores the proposition that in the evolutionary arms race, hominids evolved to specialize in what he calls "the cognitive niche" where survival is achieved by "reasoning about the causal structure of the world, cooperating with individuals, and sharing that knowledge and negotiating those agreements via language" (p. 362).

Other essays cover such issues as how the mind works, rationales for indirect speech—the problem of why so much of human conversation is "filled with innuendo, euphemism, politeness, and other forms of shilly-shallying" (p. 302)—and why the age-old argument over nature versus nurture won't go away.

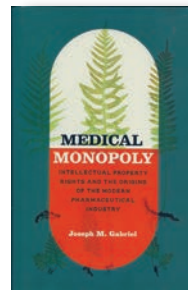
Pinker is a stylish writer, and a careful and stimulating thinker, who can be counted on to reward the reader's attention.

Patrick Lufkin

Patrick Lufkin is an STC Associate Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

Medical Monopoly: Intellectual Property and the Origins of the Modern Pharmaceutical Industry

Joseph M. Gabriel. 2014. Chicago, IL: The University of Chicago Press. [ISBN 978-0-226-10818-6. 334 pages, including index. US\$35.00.]



For much of the nineteenth century, physicians and pharmacists took what today would be recognized as an open-source stance toward the manufacture of pharmaceuticals. For both scientific and public health reasons, they argued that medical knowledge and the therapeutic compounds that knowledge made

possible should be openly available. Any attempt to place therapeutics behind a protective wall; be it through patents, trademarks, or the use of secret ingredients or formulas; was considered deeply unethical, a form of quackery.

Then, as today, such idealistic thinking ran up against the realities of commerce. To stay in business, and to develop new products, pharmaceutical manufacturers needed to be rewarded for their efforts, which meant some form of intellectual property protection was needed. Arguments about the forms it should take and how long it should last began early and are still ongoing.

Addressing the problems we have today depends on having a good understanding of how we got to where we are. That is where *Medical Monopoly: Intellectual Property and the Origins of the Modern Pharmaceutical Industry* comes in. Gabriel, an assistant professor in the

Department of Behavioral Sciences and Social Medicine at Florida State University, has done a truly heroic job of digging through dusty medical and legal archives to trace the early history of how these contending impulses—the search for openness and the need for profits—worked themselves out to produce what we have today.

It is a fascinating story, full of hard-fought positions, and gradually changing attitudes. There are also more than a few colorful characters; some hawking dubious, proprietary nostrums; some making important medical breakthroughs; some crafting legal arguments and regulatory strategies; and some founding laboratories and championing putting the industry on a sound research-based footing.

Gabriel traces the contentious arguments that took place over secret formulas and ingredients, attempts at creating a regulatory framework, how drugs should be named (resulting in the parallel chemical, brand, and generic naming systems we use today), patents (both for manufacturing processes and for pharmaceuticals), trademarks, brands, advertising (both to physicians and to the public), attempts to dictate retail prices, the development of anti-trust law, issues of international law, and more.

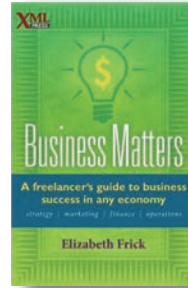
Unfortunately, the book's scope ends in the 1920s and only briefly touches on important developments later in the century such as the rise of Big Pharma and the often-troubling relationship between pharmaceutical companies and academic labs and research universities. But that history is the subject for another book. As it stands, *Medical Monopoly* is an indispensable guide to the origins of intellectual property law and the early development of the modern pharmaceutical industry; it contains a wealth of information, much of it difficult, if not impossible, to find elsewhere.

Patrick Lufkin

Patrick Lufkin is an STC Associate Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

Business Matters: A Freelancer's Guide to Business Success in Any Economy

Elizabeth Frick. 2013. Laguna Hills, CA: XML Press. [ISBN 978-1-937434-22-9. 162 pages, including index. US\$24.95 (softcover).]



Frick writes in a refreshing tone with her blatant honesty, showcasing the roller coaster of emotions you deal with in creating and maintaining your own business. She starts off with a soul-searching questionnaire that makes you look hard at your own life to see if being an independent is right for you. And although you don't get to calculate a score, by the time you think through all of the questions, you know the right answer. You might also be mentally exhausted as you rehash every detail you like and dislike about working in general!

Owning my own business was not something I thought I'd do with my life. But suddenly, after I had my son, I realized corporate America was not fitting into my dreams. I needed something with a work/life balance that kept me involved in my family yet still plugged into the technical communication world.

Business Matters: A Freelancer's Guide to Business Success in Any Economy is helpful as it provides in-depth details in maintaining client relationships and identifying the right clients for my business.

This book is full of lists! I never knew that I needed to do so much on the back end to keep my own business running long-term as a success. I could probably still be successful without following these lists, but I found Frick's suggestions of figuring out if I was a generalist or a specialist, and the benefits to both, to be invaluable.

I felt very connected to Frick as she opened up about her personal and professional life's struggles to show why she recommended doing a task in a certain way. Some of these lessons, unfortunately, must be learned the hard way before you make the right changes (read as: drop the clients that are not a good fit for your business model).

Frick's most powerful suggestion is the power of belonging to groups. As a freelancer, work life can get lonely and your inner voice can be very confusing, contradictory, and sometimes downright mean! I remember one day, not too long ago, I stared at my screen for what seemed like an eternity. I filled my mind with such doubt on the grammatical correctness of a sentence

that I was paralyzed from moving forward. Snapping myself out of that trance took about 5 minutes as I realized I could merely copy and paste the dilemma to a friend within STC and, a few minutes later, I was back on track.

No matter where you are in your freelancer journey, or if you long to become your own island (which, Frick says, there is no such thing), then I suggest you pick up *Business Matters*. You'll certainly learn more about yourself and which path is right for you. You will also finish the book feeling that other freelancers out there truly understand your struggles because the struggle is real.

Kristin Kirkham-Broadhead

Kristin Kirkham-Broadhead is an instructional designer and technical writer from Dallas, TX. She previously served the STC North Texas Lone Star Community as President from 2009-2010. When she is not writing, she loves scrapbooking, photography, and chasing her son around the house.

The 27 Challenges Managers Face: Step-by-Step Solutions to (Nearly) All of Your Management Problems

Bruce Tulgan. 2014. San Francisco, CA: Jossey-Bass. [ISBN 978-1-118-72559-7. 242 pages, including index. US\$28.00.]



In *The 27 Challenges Managers Face: Step-by-Step Solutions to (Nearly) All of Your Management Problems*, Tulgan describes the most common management challenges and how to address each one. He recommends addressing each challenge by applying a straightforward management philosophy: managers must engage in

high-quality, ongoing, one-on-one dialogues with their direct reports.

Mere communication is not enough for Tulgan. Managers must engage in high-structure, high-substance communication. Tulgan advises managers to structure their dialogues by setting up times, preparing in advance, and following a consistent format customized to each person. He recommends discussing performance standards, creating plans and checklists, focusing on concrete actions, and following up to create high substance.

Tulgan categorizes the 27 challenges into seven themes, which include the challenges of managing performance, the challenges of managing attitudes, and the challenges of managing despite forces outside your control. He then provides real-world examples from his experience that elucidate his recommendations.

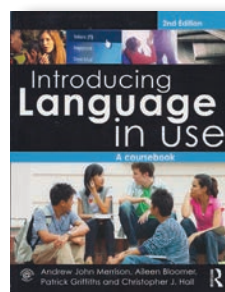
Readers can use the book as a reference guide or read it front to back. New managers or managers unfamiliar with Tulgan's approach should read the whole book. Experienced managers can also benefit from the book by skipping to the specific challenges they face. As a new manager, I used *The 27 Challenges Managers Face* both ways. The book's organization makes it easy for me to find what I needed. Tulgan's tone—informal, straightforward, and engaging—lends itself to both ways of using the book. Overall, the book combines a management philosophy with detailed advice of how to apply that philosophy to common challenges.

Alex Boren

Alex Boren is an STC member who graduated from the University of Utah in May 2015 with his self-designed, BS interdisciplinary philosophy degree. He works as an assistant manager at Goodwill in Iowa City while volunteering his grant-writing skills to the non-profit Clean Trails and to Descue Medical, a startup.

Introducing Language in Use: A Coursebook

Andrew John Merrison, Aileen Bloomer, Patrick Griffiths, and Christopher J. Hall. 2014. 2nd ed. London, U.K.: Routledge. [ISBN 978-0-415-58338-1. 488 pages, including index. US\$57.95 (softcover).]



Many books (some reviewed in these pages) offer help in understanding language—especially English. Some approach it from a theoretical point of view; others from a practical; and still others through the academic disciplines such as linguistics.

Merrison, Bloomer, Griffiths, and Hall help language learners (first as well as second) understand how English works when used. What all approaches have in common is an attempt to understand how this phenomena works. The authors also include approaches from communication theory: Frege's

principle, speech-act, and Grice's conversational organization all address how people communicate.

Morrison, Bloomer, Griffins, and Hall's *Introducing Language in Use: A Coursebook*, 2nd edition, approaches language as it is found being used. The authors cover many of the approaches used by others to help the reader understand language but with the focus on its actual use. They identify two areas for emphasis: language in actual use and techniques for analyzing that language to promote understanding. In both, the authors succeed by taking a descriptive rather than prescriptive approach.

Each chapter contains an explanation of an approach, "Key Ideas," "Activities," "Summary," "Further Activities," and further "Readings and References." This book has a companion *Reader* as well as a Web site to further enrich the learner's understanding of language in use. It is, therefore, more than a book for second-language learners. Advanced students in introductory courses will find this book useful.

Merrison, et al. target British English learners, so that American English learners must extrapolate examples and develop new ones based in American English. But that does not mean that *Introducing Language in Use* should be ignored by American students. Rather, the material has relevance because of the explanations of communication principles.

Chapters 1 and 2 present the context for what will follow: "Language, Communication and Semiotics" (Chapter 1) and "Conversational Analysis" (2). It then covers the complexity of language from words, their parts, and semantic characteristics (5, 6); to syntax (7); to pragmatics (3). Other chapters include power and politeness (4), phonetics (10, 11), language variety (12), socio- and psycholinguistics (13, 14), language acquisition (15), multilingualism (16), history of English (17), and world English (18). An epilogue, glossary, and index complete the book. The effect of the coverage is that *Introducing Language in Use* is an extensive overview of language as native English speakers use it.

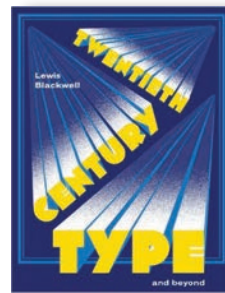
The examples are the main weaknesses for American readers. They (and their accompanying explanations) illustrate British English. But, for the persistent student and the instructor willing to expend the effort, developing American English examples should pose no problem, and the analytical techniques apply to both. Technical communicators with a strong interest in language and how it works as well as academics and their students will find this book useful both as a reference tool and a class textbook.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he serves as guest professor at the University of Paderborn, Germany.

Twentieth Century Type and Beyond

Lewis Blackwell. 2013. London, England: Laurence King Publishing. [ISBN 978-1-78067115-4. 216 pages, including index. US\$19.95 (softcover).]



The evolution of graphic design is measured through the development of typographic designs and their use in graphic designs. Across the boundaries of schools and movements in the graphic design of the past 100+ years, fonts provide the visual language that have transformed

pictures into lasting visual messages.

Twentieth Century Type and Beyond is a 7" x 9" 'mini' revised edition of Blackwell's 1992 text revised in 2004 as a quarto-sized edition. This well-written book is structured to move decade by decade through the evolution of modern typography, its application to graphic design, and the significant issues that shaped design from 1900 through the early 2000s. The text and image captions often add new information about the fonts and designs shown. It is richly illustrated, displaying a number of key font designs and some seldom seen graphic designs such as Marcel Duchamp's Janus Gallery DADA exhibition poster (1953).

Twentieth Century Type and Beyond could have been titled "How Twentieth Century Type Works" since there are more images of type used in graphic designs than displayed type alphabets. The book is full of significant graphic designs and advertisements that track the typographic development of the twentieth century in color though not always at a size that commands attention or seems logical in the apparent page grid.

The alphabets displayed include only a few designers' drawings of fonts, suggesting the author is not as interested in alphabets and their development as he is in their application in design and development. Ink drawings of Edward Johnson's 1916 font for the London

Underground are shown as a complete alphabet of what may be the first modern sans serif. Eric Gill's classic font, Gill Sans (1933), has two hand drawings that summarize key lower case letters. There is an alphabet of Bauhaus designer Paul Renner's geometric sans serif Renner with experimental characters later refined to become Futura (1927) shown as a foundry specimen display page.

The book also shows foundry display pages for fonts such as A. M. Cassandre's art deco Peignot and legendary painter Josef Albers' surprising Bauhaus design of a geometric stencil alphabet. Max Mendinger's Neue Hass Grotesk (1957) designed to compete against Akidenz Grotesk is shown as designed and as the renamed Helvetica (1958).

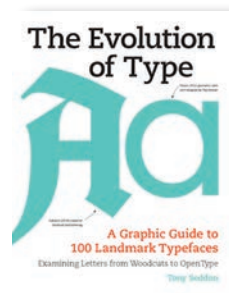
The text of *Twentieth Century Type and Beyond* is set in 6-point type with captions set in 5-point type, both of which are a significant challenge to read in the Pentagram-designed book. The text introducing motives of 21st century type states that type must be familiar enough to be highly recognizable. That may not be true of expressive and experimental print and digital designs, but it should be true of the text describing it.

Stephen Goldstein

Stephen Goldstein is an associate professor in the Communication Media Department at Fitchburg State University, a practicing graphic designer, a contributing writer to Meggs' *History of Graphic Design*. He is a guest lecturer, and published author writing in *Baseline Magazine*, *Novum*, *IdN*, and other publications.

The Evolution of Type: A Graphic Guide to 100 Landmark Typefaces Examining Letters from Metal Type to Open Type

Tony Seddon. 2015. Buffalo, NY: Firefly Books. [ISBN 978-1-77085-504-5. 256 pages, including index. US\$29.95.]



Seddon's *The Evolution of Type: A Graphic Guide to 100 Landmark Typefaces Examining Letters from Metal Type to Open Type* begins and ends with blackletter type. This book shows how type has evolved since the dawn of the printing press to the digital age through a collection of 100

typefaces. Seddon also examines the contributions of various typographers and type designers throughout history and breaks the book into sections that show major shifts in typography and printing. These shifts include the invention of movable type, the typesetting machine, phototypesetting, and digital typography. Two-page spreads highlight the typefaces that are relevant to each era.

The two-page spread for each typeface contains a font description and the background information about the creator(s), its history, and inspiration of each typeface. This information also includes typefaces that were inspired by the highlighted font and information about the various versions that are available, especially in the instances of types that are digital revivals of historic designs. Each spread includes a few enlarged letters that show the defining characteristics that set the typeface apart. Examples of the type set in dummy text show body and headline weights, largely depending on the appropriate use of the font in question, to give the reader a sense of how these fonts will work. Finally, Seddon helps the reader by providing a recommendation of which version to use when multiple options are available.

The Evolution of Type truly is an evolution of type and is not an exhaustive history of typography. The brief history Seddon includes shows the reader how technology developed and how it has influenced the direction of type through time. This account, despite its brevity, is handled well and helps readers to connect shifts in type design with the major changes in technology. Seddon also explains the classifications of typefaces and how this has been a long point of contention between typographers, graphic designers, and historians because there is no universally accepted method for classifying type. While there are many similarities from one system to the next, there are also some distinct differences.

This is an excellent text for anyone wanting to further their knowledge of how typefaces have evolved in the last 500 years. While it is not a comprehensive history, the selection of 100 types to represent this evolution makes it a manageable text that should not be intimidating to new readers. The most useful part is the inclusion of the variations of each typeface and recommendations of which ones to use and why. It is intriguing that Seddon chose Selva as the 100th typeface, which is a modern interpretation of a blackletter, thereby bringing the text full circle,

beginning with Gutenberg's invention, which began with a blackletter font whose design was based on the popular writing of the scribes of his era.

Amanda Horton

Amanda Horton holds an MFA in design and currently teaches graduate and undergraduate courses at the University of Central Oklahoma in the areas of design technology, design studio and history of graphic design. She serves as a book reviewer for *Technical Communication*.

New Information and Communication Technologies for Knowledge Management in Organizations

Daniel Palacios-Marqués, Domingo Ribeiro Soriano, and Kun-Huang Huarng, eds. 2015. New York, NY: Springer. [ISBN 978-3-319-22203-5. 138 pages, including author index. US\$60.00 (softcover).]



Conference proceedings are a special publishing form that have even tighter deadlines than journal articles and books. For them to be useful to the intended readers, they have to appear as soon after the conference as possible. Editors are forced by timelines to make trade-offs between stylistic and textual editing and

currency. Problems with style and other matters are exacerbated when the language of the papers is not the author's native language (in this collection, two papers are from native speakers: one from Australia and one from the US).

Daniel Palacios-Marqués, Domingo Ribeiro Soriano, and Kun-Huang Huarng's *New Information and Communication Technologies for Knowledge Management in Organizations* contains 13 papers from the 5th Global Innovation and Knowledge Academy Conference, July 14–16, 2015. Because the conference was held in Valencia, Spain, 19 of the 36 authors/coauthors are from Spain. Most of the others besides the native speakers come from Portugal (3) and Taiwan (6).

As the proceedings' title suggests, the conference was about new technologies in knowledge management within organizations. The editors state in their Preface that the conference aim is to develop a "solid evidence

base concerning new information and communication technologies for knowledge management, measuring the impact and diffusion of new technologies within organizations, as well as the role of new technologies in the relationship between knowledge management and organizational innovation" (p. v). The papers use an academic style, containing footnotes and end notes, as well as being organized using some variety of the Introduction, Methods and Materials, Results, and Conclusion format.

The organizations of the titles are mainly unnamed, but are rather financial institutions, educational institutions, and those that would use, for example, databases and mining. The technologies, on the other hand, are specific. Some technologies the papers cover are linear programming, fuzzy logic, fuzzy set quality comparative analysis, social network analysis, and cyber security. All papers, as might be expected, report results that support conclusions that solve the problems posed by the authors.

The knowledge management part of the papers focuses primarily on the value of employees and other life-cycle asset management items and the implied value of improved access to information. In the case of two papers that focus on education, measuring the improved learning of students constitutes knowledge management.

Technical communicators can find relevant information in these conference papers. With the conference being held in July 2015, and the proceedings copyrighted 2015, the editors did not have much time to get the book through production. That, coupled with English not being the first language for all but two of the authors, means that the text contains idiom problems. Even so, *New Information and Communication Technologies for Knowledge Management in Organizations* can be a useful addition to a company library.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

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